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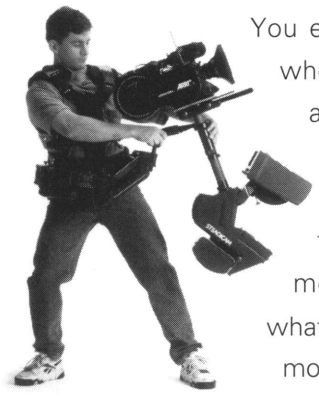

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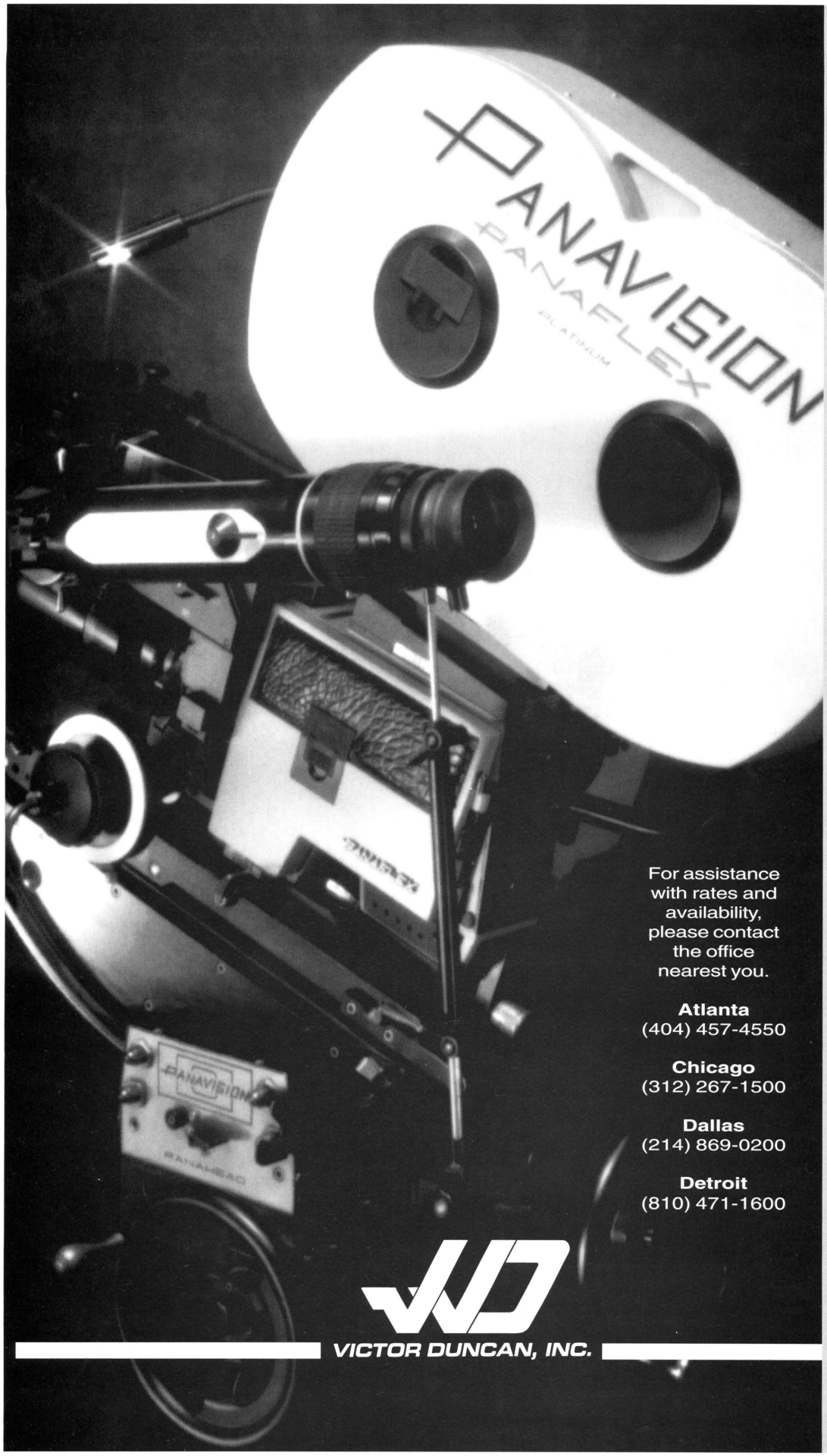

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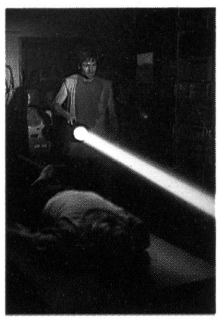
June 1995 Vol. 76 No. 6

American Cinematographer

Features



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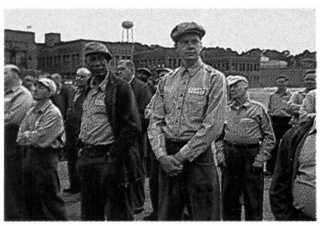

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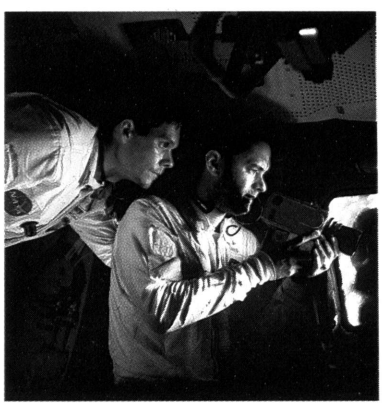

On Our Cover: Operating in the cramped confines of a "space module" lit by Dean Cundey, ASC, Tom Hanks and Kevin Bacon portray astronauts attempting to overcome a serious technical malfunction in *Apollo 13* (photo by Ron Batzdorff).

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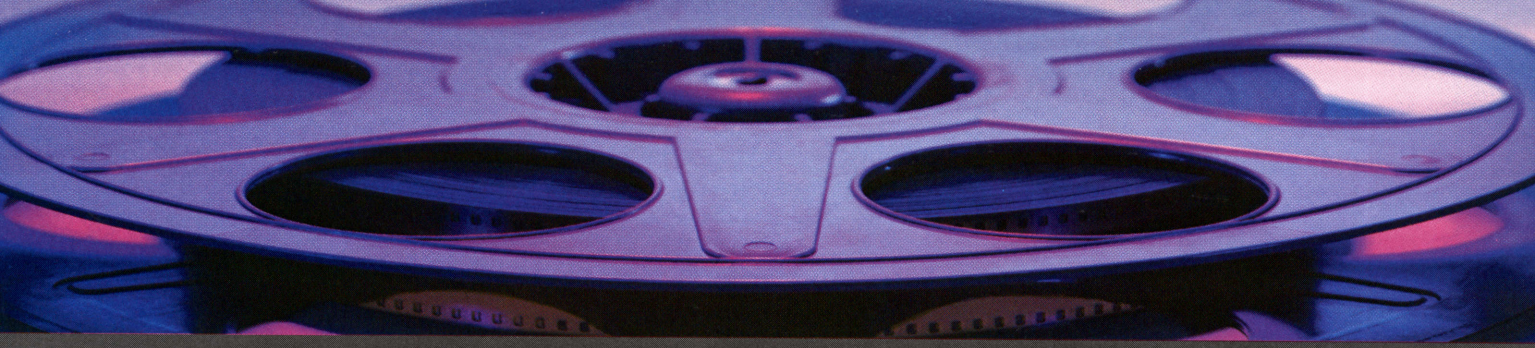

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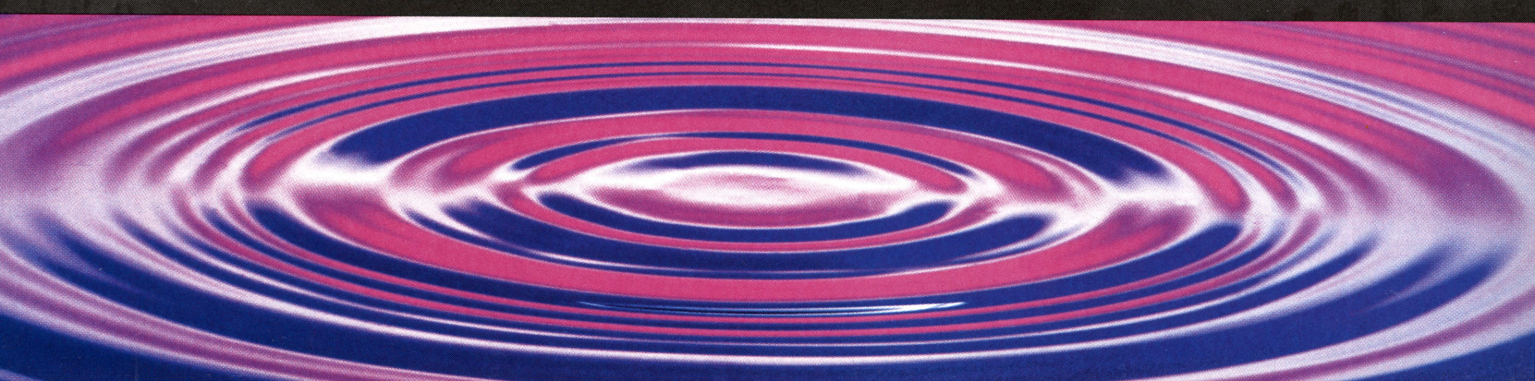

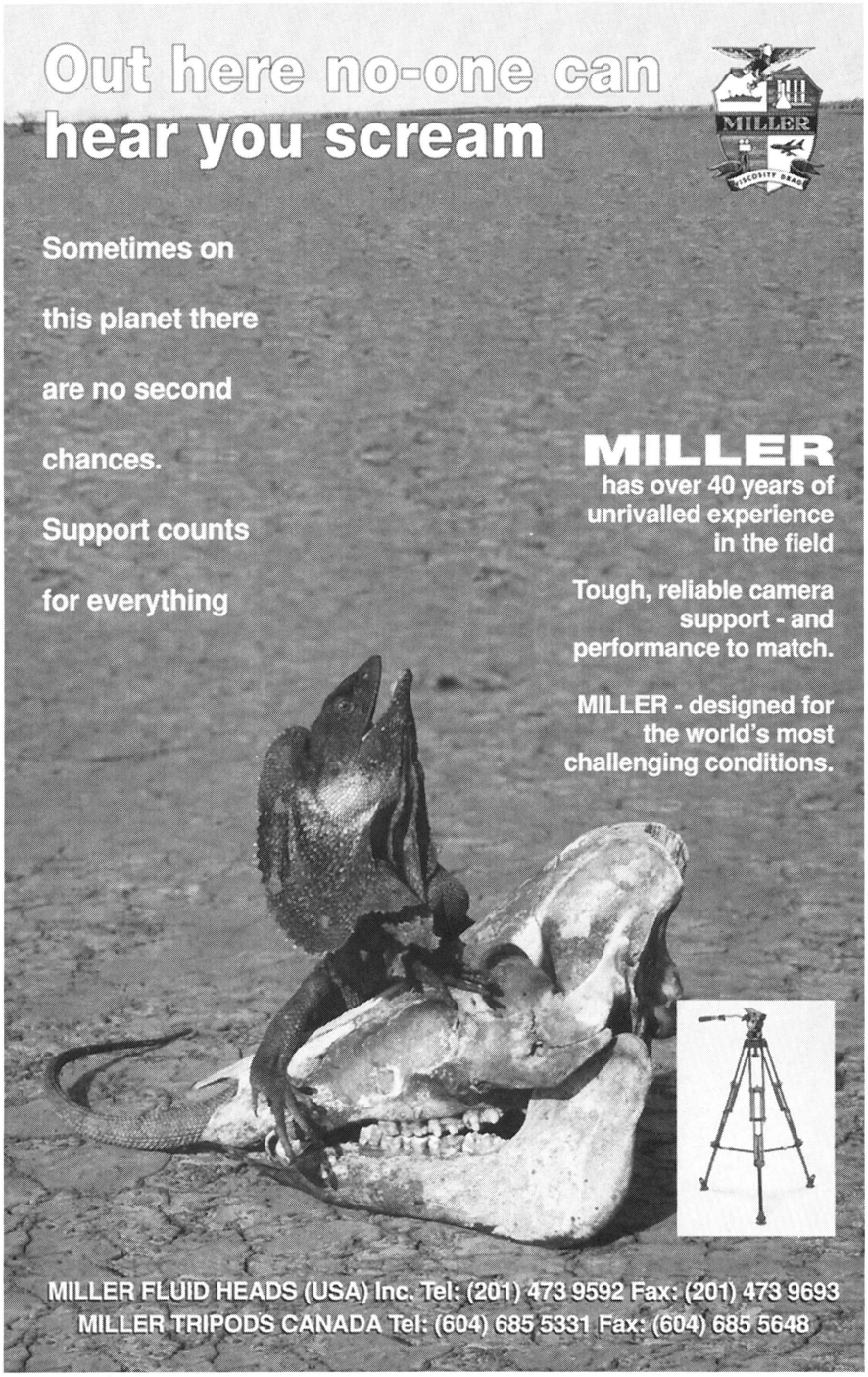

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The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as directors of photography and have demonstrated outstanding ability. ASC membership has become one of the highest honors that can be bestowed upon a professional cinematographer — a mark of prestige and excellence.

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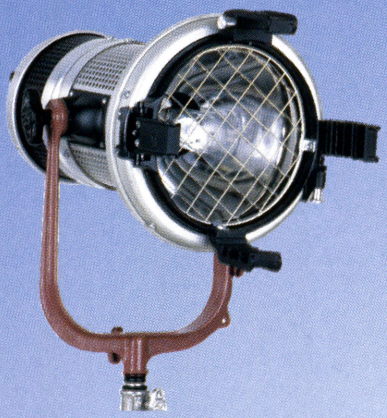

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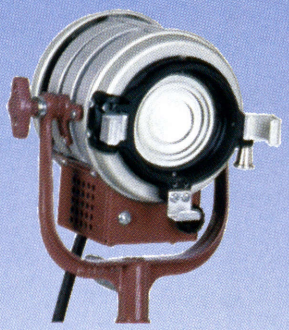

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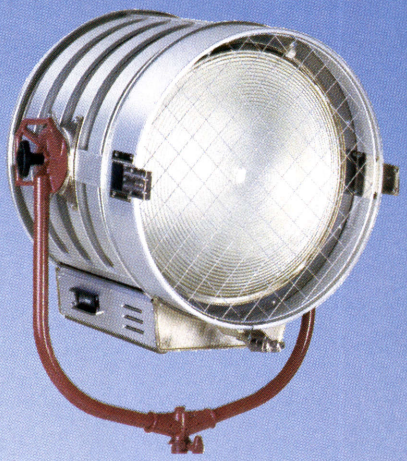

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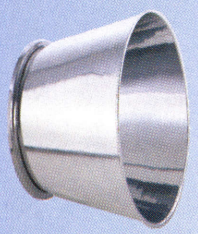

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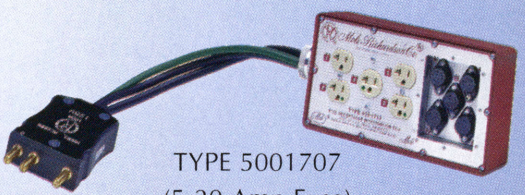

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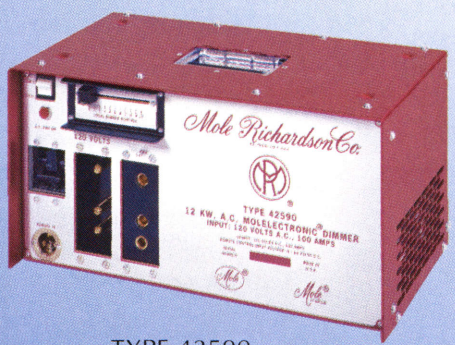

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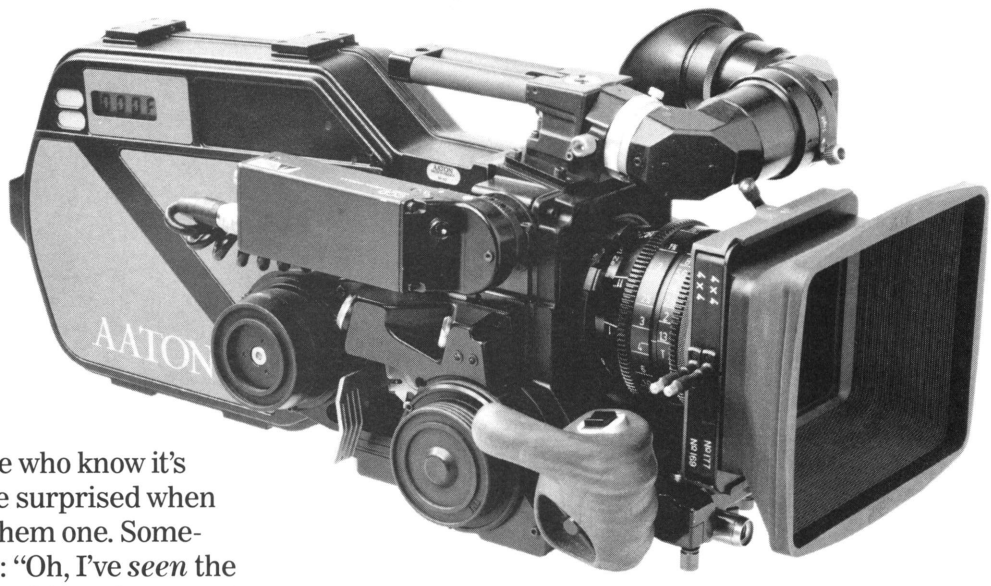
At Clairmont: the latest model of the AATON-35



Even people who know it's small are surprised when we first show them one. Sometimes they say: "Oh, I've *seen* the Sixteen, it's the ***Thirty-five*** I want to see now." We say: "This is the Thirty-five." They say: "***That's*** the Thirty-five?"

16mm style

DP Tom Sigel used to own two AATON 16mm LTRs. "I put millions of feet through them, shooting documentaries and television," he says. "They balanced perfectly on my shoulder; and this AATON-35 is the same. I'm using it for features, but I'm shooting the same way. Once you're tuned in, you barely have to hold onto it."

No headroom

DP Chuck Minsky used an AATON-35 to shoot dialogue for an MCI commercial inside a New York taxi. "We were hoping for a Checker cab," he says, "But this was a regular sedan, with no headroom. We drove back and forth all day across the Brooklyn Bridge, with two actors in the back seat and me in the front seat, hand-holding."

No soundman

DP Petr Litomisky recently shot a commercial for Seafirst Bank in a Piper over Seattle. Its four seats were occupied by the actor/pilot, the director, an ad agency man (feeding the actor lines) and Mr. Litomisky with an AATON-35. "No room for a soundman," he says, "So we put a Nagra behind the seats and used timecode."

Getting better

"I began shooting with AATON-35s about five years ago," says Mr. Litomisky. "Now Clairmont has some; and theirs are noticeably quieter. And I've had no reliability problems with theirs. Even their *magazines* are quieter; I don't know why."

2 million feet

1st AC Michael FitzMaurice worked at Pytka for about ten years, mostly as a 2nd AC. "They bought an AATON-35 in 1991," he says. "Since then, Pytka must have run 2 million feet through it, half of which I loaded myself. The clip-on magazine has a reputation for being difficult to load, but I don't think so."

Dependable

"From 1991 to mid-1994, I wouldn't have said the AATON-35 was dependable. Now it is," says Mr. FitzMaurice. "From the beginning, we were saying: ***As soon as Clairmont gets ahold of them, these cameras are going to become magic***. And now they have."

The modifications

With AATON's expert cooperation, we made several changes to one of our first two cameras. To decrease friction, we milled additional channels in the gate. We also reduced the contact area on our magazine pressure pads. We increased the pad's spring tension and we narrowed the film channel's depth. Our claw was set for deeper penetration

and increased spring tension. We suggested that the factory might increase the stroke length; and they did so.

All cameras at Clairmont have all the newest features

All these improvements are now built into all the AATON-35s at Clairmont, together with a few more of our own modifications. All our cameras are the latest version of the 35-III. See the new factory features listed below.

Carry-on

"We've gone into places where nobody knew we were filming, where a slate would have blown our cover," says Michael Fitz-Maurice. "I've walked in with the camera in a shoulder-bag designed for a pro Betacam camcorder. Nobody gives it a second look. The whole camera fits into it, with lens and magazine in place. I regularly walk onto airplanes with that bag on my shoulder, as carry-on baggage."

Camera smuggling

"I took the Pytka AATON-35 as carry-on to Brazil and back to the U.S.A. *twice*," says Mr. Fitz-Maurice. "We were shooting Nike commercials to be aired at the Soccer World Cup and we needed shots of the Brazilian players. On both shoots, I carried that camera into Brazil and out again without any of the authorities being aware of it."

The new factory-installed features:

A movement heater that reduces low-temperature power drain; an optional eyepiece heater; easier loop-length forming; a high-def, flicker-free, color video assist with time-code both in the video blanking and visible on the monitor; a user-adjustable shutter, to sync at 24fps with 60Hz and 50Hz lighting and with video monitors; adjustable pitch, for quieter running.

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Production Slate

compiled by Marji Rhea and Stephen Pizzello

Independent Spirit Awards

The Independent Feature Project/West presented the 10th Annual Independent Spirit Awards in fine style this year. The event took place on Saturday, March 25 under a specially constructed tent at Santa Monica Beach in Los Angeles. The ceremony drew the usual horde of celebrity guests, including Master of Ceremonies Kevin Pollack, Honorary Chairs Jodie Foster and Harvey Keitel, and Keynote Speaker John Turturro, among a slew of others. Following the presentation, attendees and their guests were treated to an elaborate catered party held in a hangar at the Santa Monica Airport.

In the Best Cinematography category, John Thomas took top honors for his scenic work on *Barcelona* (Fine Line Features). The other artists saluted in this category were Greg Gardiner for *Suture* (Samuel Goldwyn Company, see *AC* July 1994), Jong Lin for *Eat Drink Man Woman* (Samuel Goldwyn Company, see *AC* Jan. 1995), Stevan Larner, ASC for *The Beans of Egypt, Maine* (I.R.S. Releasing) and Alexander Gruszynski for *I Like It Like That* (Columbia Pictures).

Winners in other key categories were as follows:

Best Feature: *Pulp Fiction* (Miramax).

Best First Feature: *Spanking the Monkey* (Fine Line Features).

Best Director: Quentin Tarantino, *Pulp Fiction.*

Best Debut Performance: Sean Nelson, *Fresh* (Miramax).

Best Female Lead: Linda Fiorentino, *The Last Seduction* (October Films).

Best Male Lead: Samuel Jackson, *Pulp Fiction.*

Best Supporting Female: Dianne Wiest, *Bullets Over Broadway* (Miramax).

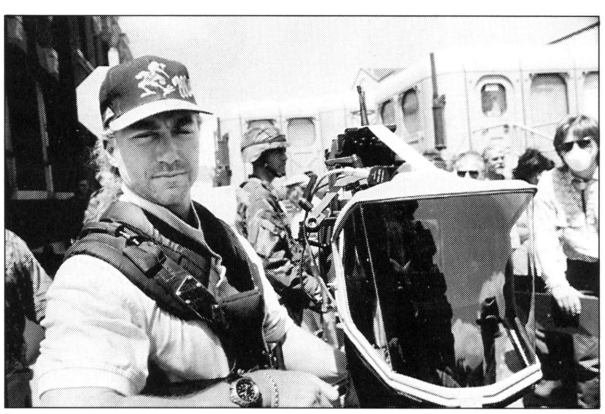
Best Supporting Male: Chazz Palminteri, *Bullets Over Broadway.*

Best Screenplay: *Pulp Fiction* (written by Quentin Tarantino, stories by Tarantino and Roger Avary).

Best First Screenplay: *Spanking the Monkey* (David O. Russell).

Best Foreign Film: *Red* (Miramax).

In addition to the regular awards, the IFP honored the documentary *Hoop Dreams* with a Special Distinction Award, and presented a Findie Award to producer Samuel Goldwyn, Jr.



Mark Emory Moore and his Steadicam, rigged for a disease control worker's POV.

Steadicam in *Outbreak*

The Steadicam Series III, manufactured by Cinema Products in Los Angeles, recently helped capture some hair-raising images of an American city devastated by plague in the feature release *Outbreak*, directed by Wolfgang Petersen and shot by Michael Ballhaus, ASC. Steadicam operator Mark Emory Moore used the Steadicam to shoot a series of scenes for the film, including its two dramatic opening sequences. In the first scene, the Steadicam records an establishing shot of army officers in protective gear as they make their way through an encampment of mercenary soldiers in southern Africa, where the disease is first observed.

"It's a very intense, scary sequence," says Moore. "It's shot through the officers' masks, and as they camera moves along, it looks to the right and left, revealing the faces of soldiers dead and dying from the disease. That, coupled with the heavy sound of the breathing apparatus, results in a very effective scene."

The second shot is a two-minute sequence traveling through a top-secret military research center in Maryland. The camera moves through four levels of the facility, each one progressively more secure. It finally arrives at the highest security lab, where stars Dustin Hoffman and Rene Russo are discovered in bulky, air-tight suits.

Many other Steadicam shots reveal the point of view of Hoffman as he walks in protective gear through theU.S. town that is overwhelmed by the disease. For those scenes, Moore and the film's special effects crew built a rig to hold Hoffman's protective mask over the camera lens. For another scene, Moore mounted the Steadicam to the door of a helicopter hijacked by Hoffman's character and recorded its flight over the plague-ravaged city.

For information: Cinema Products Corp., (310) 836-7991, FAX (310) 836-9512.

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The Carolina Institute for Film Production is offering six-week intensive classes and workshops in motion picture camera operation, video camera operation, lighting and sound recording for film and video, and postproduction. Classes are three days a week and taught with 35mm professional motion picture equipment. Students learn in a hands-on way about film stocks, mag loading, camera body movement, proper threading techniques, lenses, etc., and shoot their final project on 35mm, which is processed and transferred to tape.

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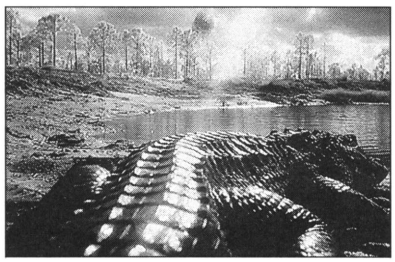

Infrared Black & White Shoot

Meiert Avis of Windmill Lane Productions in Venice, California created a strange and beautiful package of Cobra Golf spots, which began airing in January, using infrared stock — stock that can be scratched by a camel hair brush, has to be stored in dry ice and loaded in a double-sealed dark room, and whose shelf life has expired by the time you get delivery.

"I spend time researching stocks, filters and lenses to find new and appropriate ways to shoot things," says director Avis. "Infrared is a fascinating nightmare, very unstable and unpredictable, but these variations are themselves very beautiful. We had been looking for the right project for awhile, but the fact that you have to special-order the stock eight weeks in advance required a client with some forward vision and confidence.

"The media buy for these spots consists of time during golf tournaments," he explains. "The viewer has been staring at a sea of green fairway, so black & white seemed like an obvious way to refresh the eyeball and keep the audience watching. Kirk Souder, creative director at agency Ground Zero, was looking for images infused with mystery, with some subtle spiritual quality that would make it seem like you had entered a dream world."

As producer Ben Dossett and director of photography Aaron Bowen got into the prep, it became evident that this might be a curse, not a blessing. Infrared stock, which can be inadvertently exposed without even being taken out of the can, is not a motion picture stock; its remaining application is high-altitude mapping. Needless to say, it's hard to get, and this would be the largest order of infrared stock since the Nevada nuclear tests in the Fifties.

Camera bodies and plates had to be specially prepared for the stock, filters had to be handmade and tested, and lenses had to be recalibrated for focus, because infrared wavelengths focus in a plane different from that of visible light.

The filter combination that gave the look Avis liked had the considerable inconvenience of being completely opaque to visible light; he couldn't see what he was shooting. Since some materials have unexpected reactions to infrared light, the golf clubs, golf balls, wardrobe, props and golf course itself all had to be tested. No infrared meter is available, but human skin proved to be the best way to measure the radiation. To test the film's behavior in telecine, Digital Magic performed extensive wedge testing on their Bosch telecine and determined that the proper exposure rating was very different from the one in published stills photography literature, and also discovered major differences in sensitivity from roll to roll.

"The shoot itself was a breeze," recalls Dossett. "Dragging trucks out of sand dunes was playtime after all the abstract details of preproduction. We shot everything with two cameras simultaneously, one infrared, the second with PlusX, the traditional black & white stock."

"Going into telecine we were all a little tense," says Avis. "But right away it was obvious that we had caught something special. You don't get many pleasant suprises in telecine: you either get what you expected or you find that you screwed up. Usually cinematography is a predictable science, not alchemy, but this was different. Each shot had its own magical, idiosyncratic light effects. In addition, because of the opaque filter pack, this was the first time we were able to see exactly what action the infrared camera had been looking at. When seen side by side, the PlusX looked mundane, while the infrared was radiant, beautiful, luminous, and strange, with all the texture and patina we had planned for. The action had been transfigured by the infrared light."

"The first few minutes of the telecine were one of the few times in my career where what I saw was miles ahead of what I had originally envisioned," confirms Souder.

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Primal Fear
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Wigstock

Teatown Video, Inc. provided editorial and postproduction supervision for *Wigstock: The Movie*, a full-length feature slated for June release that was filmed at the annual Labor Day festival in downtown Manhattan. The movie features such prominent pop culture figures and drag icons as Supermodel of the World RuPaul, the musical group Deee-lite, dance music recording star Crystal Waters, actors and drag performers Alexis Arquette and Jackie Beat, and the legendary divas Lypsinka, Mistress Formika and Joey Arias.

The editorial team began cutting *Wigstock* in October, assembling a 42-minute version within a month in order to submit it for entry in the Sundance Film Festival. After learning of their acceptance a week later, it was a race to finish the entire project in time for the January film festival. Producer/editor Marlen Hecht, line producer/editor Tod Brody and director/editor Barry Shils not only had a tight schedule, they were faced with a vast array of elements: 35mm film, Super 16 and Super 8, D-2, Beta SP, 3/4-inch and Hi-8. "As a technical process, it was one of the most difficult live-action, non-special effects movies," Shils says. "The editorial talent of Marlen Hecht and technical expertise of Tod Brody were invaluable to the project."

The entire 80-minute feature was edited on Teatown's Avid Media Composer 800 nonlinear editing system with four channels of audio. All of the sound for the movie was edited on the Avid's 24 tracks; each reel was laid off to a Tascam 8-track digital multi-track recorder and mixed from 16-track. Teatown designed the *Wigstock* main title sequences utilizing vintage Super 8mm festival footage. This was edited on Teatown's Avid 1000 using the highest online resolution and employing many DVE and motion-control effects, as well as Mac graphics. Additional optical effects were designed and composited in one of Teatown's D-2 online suites; the final version was then match-edited, conformed and blown up to 35mm at an optical house.

In addition to juggling a host of interformat material and working against the clock, Brody handled the logistics of dealing with two film labs on opposite coasts. San Francisco's Monaco Interformat lab shot the 35mm blowups of the titles, while Pennsylvania's Cinema Arts took care of the Super 16 to 35mm blowups and all interformat dissolves.

For information: Teatown Video, 165 W. 46th St., New York, NY 10036, (212) 302-0722, FAX (212) 819-0079.

3-D Animation Services

Metropolis Digital of San Jose, CA, a computer animation facility, has added a custom creature modeling shop, 3-D digitizing station and a full motion-capture studio in their move to expand their services to 3-D character development. They've also acquired Wavefront Software, complementing their Alias packages and additional Silicon Graphics Indigo 2 workstations.

The company has also added a custom creature and modeling shop, where clay representations of characters are sculpted and then digitized into the computer as a wireframe, achieving accurate and lifelike character models.

For information: Metropolis Digital, Inc., 12 S. First Street, Suite 1000, San Jose, CA 95113, (408) 286-2900, FAX (408) 286-2901.

Nashville Cel Animation Facility

Nashville's Vision Tree Films is celebrating its first year as the city's only source for cel animation. Producer and director Ben Ryan worked for more than eight years in the Nashville film and video community and in early 1994 founded Vision Tree Films, which has since grown from two full-time employees to six.

Ryan's first long-form animated video was the 30-minute "Why Christmas Trees Aren't Perfect." Animation projects now in production include

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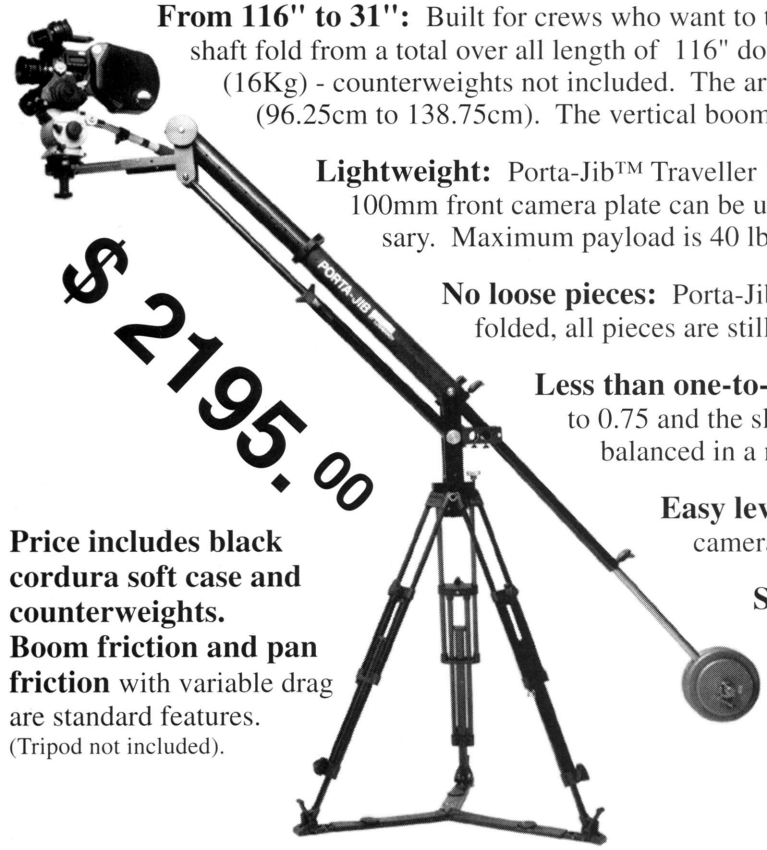

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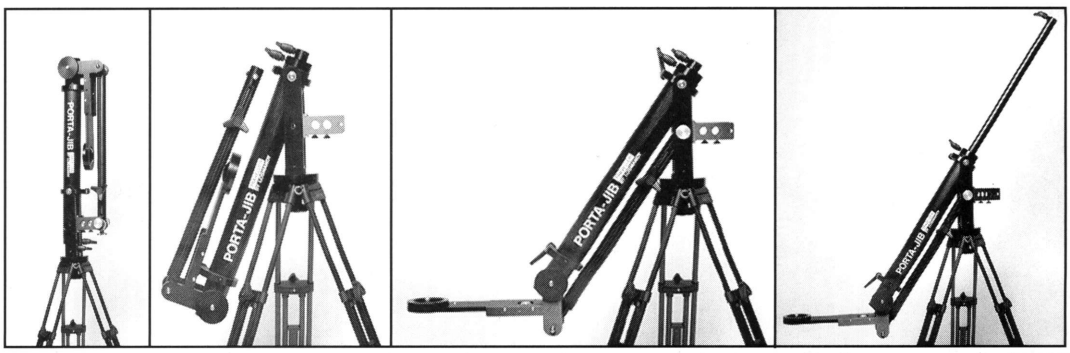

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three 30-minute videos for Everland Entertainment and a 60-minute Christmas special for broadcast in cable in 1996 for an undisclosed Music Row firm.

For information: Vision Tree Films, 1701 West End Ave., Nashville, TN 37203-2600, (615) 726-3690, FAX (615) 256-0105.

Lighting Via Video Conferencing

Lighting director/director of photography Bill Holshevnikoff's new lighting design and consulting service, Satel-Lighting, provides live lighting direction and consulting via a video conferencing system that utilizes normal phone lines. The conference system consists of a specially-equipped PC computer in Holshevnikoff's office, and other similarly-equipped PC laptops that can be shipped around the country. A small camera attached to the top of each PC allows the two parties to see each other on the PC screens, and three inputs on the back of the client's laptop accept NTSC video signals from the production camera(s). Holshevnikoff selects the camera signal that he needs to see, and then directs the crew through lighting setups that range from corporate talking heads to full news and interview sets. Whiteboard information, diagrams and technical imagery can be shared instantly between the two parties.

Holshevnikoff, who recently used his system to relight the news set at San Francisco's KDTV-14, has been lighting and shooting broadcast, corporate and educational programming for over 13 years for such clients as Buick, the BBC, American Airlines, PepsiCo, SEGA, Infinity, and Ritz-Carlton Hotels. His experience as an educator includes numerous lighting education videos, a four-hour multimedia "Power of Lighting" seminar, and more than 70 columns in trade publications. Over the past three years he's completed two 30-city lighting lecture tours across the U.S. and Canada.

For information: Satel-Lighting, P.O. Box 2135, Novato, CA 94945, (415) 892-0501, (800) 340-1993.

Historical Footage Library

ABC News has opened a new computerized tape and film historical footage library that features archival stock footage from both ABC News and the film and video libraries of Worldwide Television News (WTN). The library of WTN represents the largest group of news archives in the world. ABC News VideoSource will include all major news events covered by ABC News since 1963 as well as extensive outtakes shot at the same time but never seen before.

The collection will also offer a wide range of stock footage subjects, from nature scenes to contemporary life in America. The material can be easily accessed via a proprietary computerized online research system by phone or fax. Time-coded research videocassettes are available by overnight delivery. Final materials are offered in all tape formats.

For information: ABC News VideoSource, 125 West End Ave., New York, NY (800) 789-1250.

Aerial Production Company

Aerial Cinema Productions, a full-service aerial production company based in New York, combines the talents of aerial coordinator/film pilot Ray McCort and aerial cinematographer Joshua Narins and offers a full range of aircraft and aerial camera systems, as well as safety coordinators, aerial unit producers, and FAA mechanics.

The company makes all the necessary arrangements for an aerial shoot: personnel, equipment rental, FAA clearances, permits, etc. The company is a member of the IFP, and while they are dedicated to promoting and fostering the New York production community through their network of aircraft and equipment suppliers, ACP can provide their service anywhere throughout the United States, Canada and the Caribbean.

McCort and Narins are both veterans of projects ranging from studio features to commercial campaigns, music video clips, documentaries and independent films. The company's credits range from CGI plates for the Timex-Indiglo watch spot to National Geographic's Explorer project, *The S.E.T.T.* The duo also worked on the recent Microsoft campaign, which found them making heart-stopping passes through the steel canyons of New York City. For the campaign's "Anthem" spot, Narins employed a Tyler Nose Mount to make low-level runs at Wall Street, terminating in pulse-quickening 60-degree bank rolloffs. The "Gather Up" spot necessitated using not only the Nose mount for radical overhead strafing runs of the

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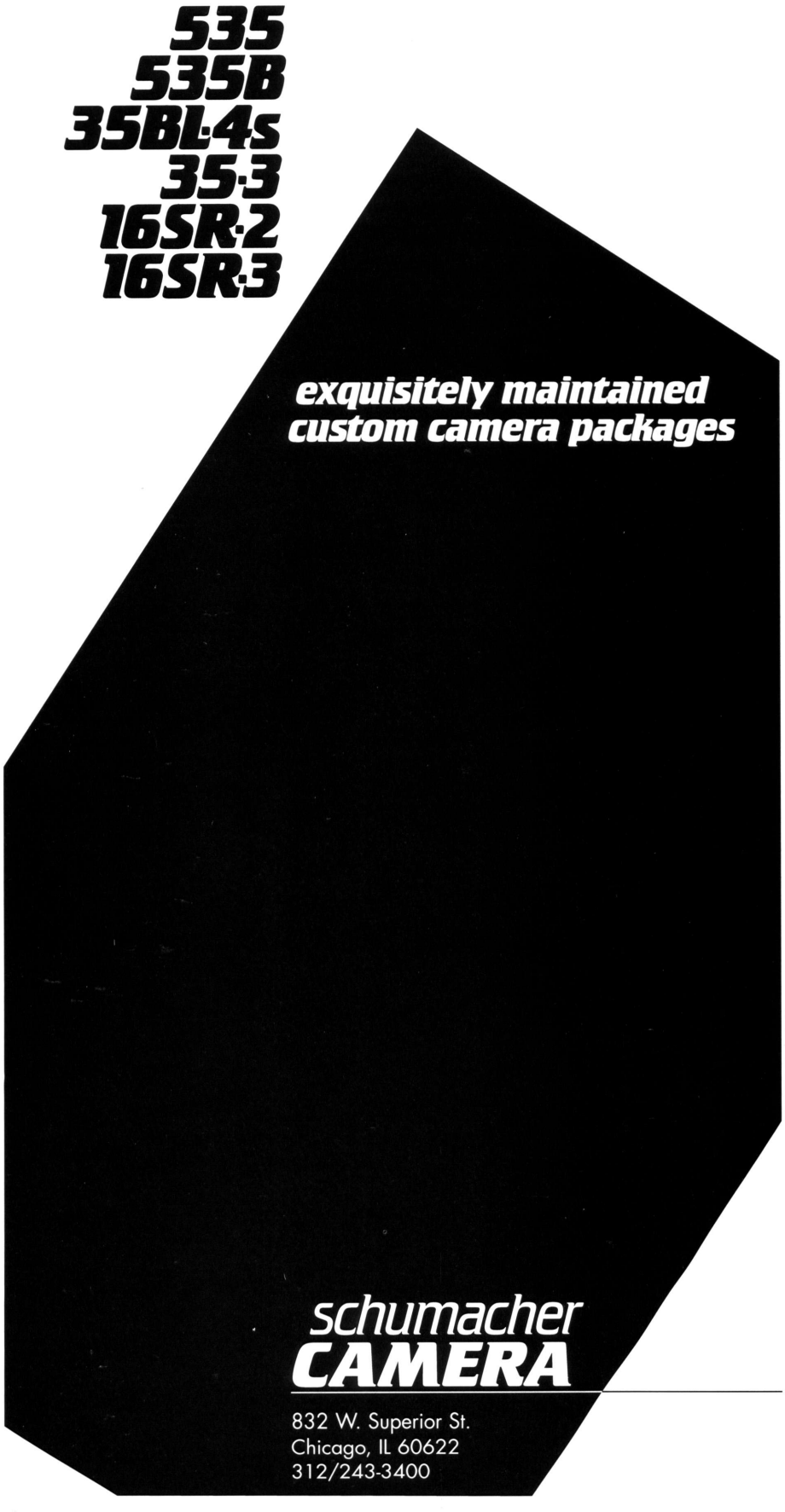

Brooklyn Bridge, but also the Continental Magnum Mount, a mechanical side mount, to gather magic-hour skylines and elegant night footage incorporating the Empire State Building.

For information: Aerial Cinema Productions, 778 Park Ave., Suite 101, New York, NY 10021, (212) 714-6037, FAX (212) 754-0299.

Visual Media Services Company

MediaCom, Inc. is a new visual media services company that provides Stamford, CT-area producers, directors and production companies video support services on various levels. The company uses an Ikegami HL57 digital camera and support equipment, one of the first systems in the area. President Rocky S. Progano has been a videographer/director of photography in the Stamford area for twelve years and is experienced in shooting corporate, industrial, and commercial videos for area Fortune 500 companies. He's also done extensive shooting in the Northeast and around the world.

For information: MediaCom, 880 Canal St., Stamford, CT 06902, (203) 353-0005, FAX (203) 353-0153.

Avid Acquisition

Avid Technology Inc. has acquired the Parallax Software Group of London, England, a developer of paint and compositing technology, and Elastic Reality, Inc. of Madison, Wisconsin, a developer of special effects software.

For information: Avid Technology, Metropolitan Technology Park, One Park West, Tewksbury, MA 01876, (508) 640-6789, FAX (508) 640-1366.

Merger

Egripment BV of the Netherlands and Kaleidoscope Camera Control of the U.K. have merged. All of Kaleidoscope's products will be marketed by Egripment's worldwide dealer and sales network.

For information: Egripment, (02945) 39 88, FAX (2945) 46 58.

Errata

The credit line was omitted for the CG image that appeared on page 14 of our April issue. The artist is Nick Ilyin of Synchromic Studios, Maui.

MAGNUM ON THE SET:
with Michael Ballhaus, ASC

"Magnum is a versatile and trouble-free machine. It's exactly the tool we needed for our style of photography and the many action sequences we faced."

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Photo: Peter Sorel, *Outbreak* © Warner Bros.

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Michael Ballhaus & Magnum on the set of *Outbreak* from Warner Bros.

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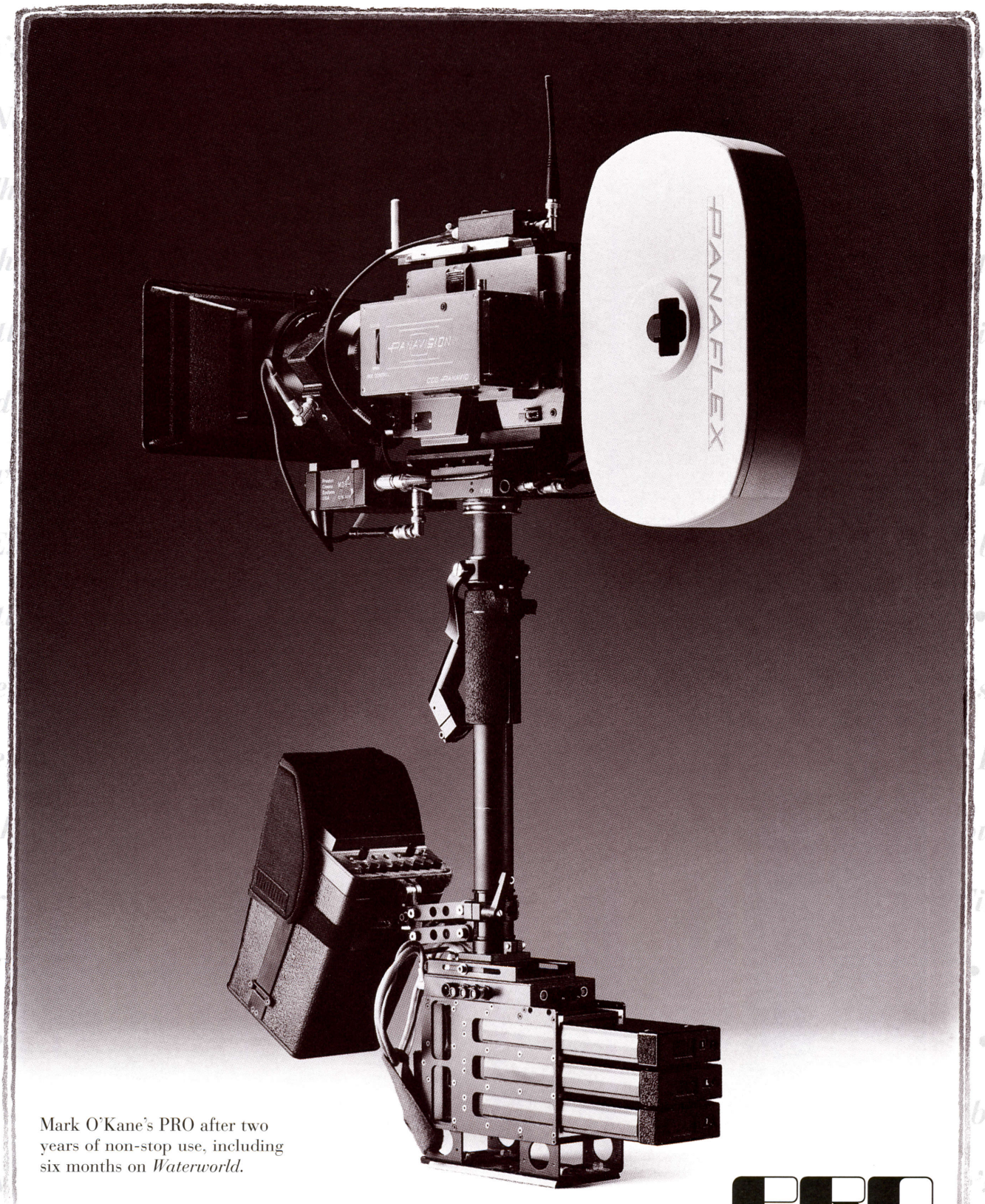

Mark O'Kane's PRO after two years of non-stop use, including six months on *Waterworld.*

Photo: John Livzey

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No Hair Shirt Needed on Clothestime Shoot

by Mary Hardesty

No one runs around with dulling spray on director/cinematographer Joe Murray's set. "It's totally passé now," explains Murray, who has just completed shooting the new Clothestime campaign. "First of all, the film stock is so good now and, second of all, it's the little burns and kicks that give the magic and put life into the set," says Murray, whose recent work includes spots for Mazda Trucks, Sara Lee and Giorgio Perfume.

In Clothestime's "Hairy Man," Matthew, a young man with no shirt but a profusion of body hair, coyly suggests that women have two ways to keep warm this winter. They can bring home a sweater from Clothestime or bring home a hairy man.

Murray chose to use Kodak's high-speed 5296 color negative and Clairmont's special swing-and-tilt lenses for the spot, even though the final aired version was to be in black & white. "I took the color out in post and put the contrast in approximately where it would be for black & white film," he explains.

Keeping the finished spot in mind, Murray lit for a black & white film contrast. "I like my light to look real. I don't want it to be coming out from under chairs or other places it doesn't normally appear. I start by finding one light to light the set beautifully."

According to this 22-year photography veteran, who always serves as cinematographer on the spots he directs, what separates the masters from the apprentices, besides their number of years of experience, is where they *don't* put lights.

"I had the privilege of meeting one of the all-time great cameramen, Bill Fraker, [ASC,] and he said he spent more time turning lights off than on. Now, if I see eight or nine lights on the floor, I know we're in trouble," he observes. "When I look at the walls, I only want to see one shadow. A lot of cameramen say they're shooting a low-key set when all they've done is underexpose. I want my sets to have deep blacks and whites. Some of the whites can even be overexposed and out of control. That helps put reality into a scene."

Murray, whose first photography job was shooting the New York Museum of Art's entire Roman glass collection, wanted to be a cinematographer ever since his Catholic school days when he had to collect magazines for fundraisers.

"In fact, it was a discarded box of old *American Cinematographer* magazines that first got me thinking I wanted to be a cameraman," recalls Murray, who shot his first student films while studying industrial engineering at Kean University. These short films brought him to the attention of Long Beach State College, which invited him to join its film program.

After graduation in 1978, Murray got a job at MCA working on the then-revolutionary video disc. "I come from the technical end of filmmaking," states Murray. "What happened was we had gotten one of the first Ranks that had come into the country and my job was to do an in-depth study comparing film to video. This was before anyone was talking much about it. I did a lot of work with electronic definition and the photochemical process and got to meet a number of brilliant people. My criteria for picking my next job was to work for a company that had a Rank and did camerawork, because I knew by then I wanted to be a cameraman," says Murray, who went to work as a Rank operator/editor/cinematographer for Northern California-based One Pass Films from 1982 to 1986.

As his reputation as a post engineer/cinematographer started to grow, opportunities began to appear and Murray switched to Los Angeles-based Film Fair. "At that time, commercials

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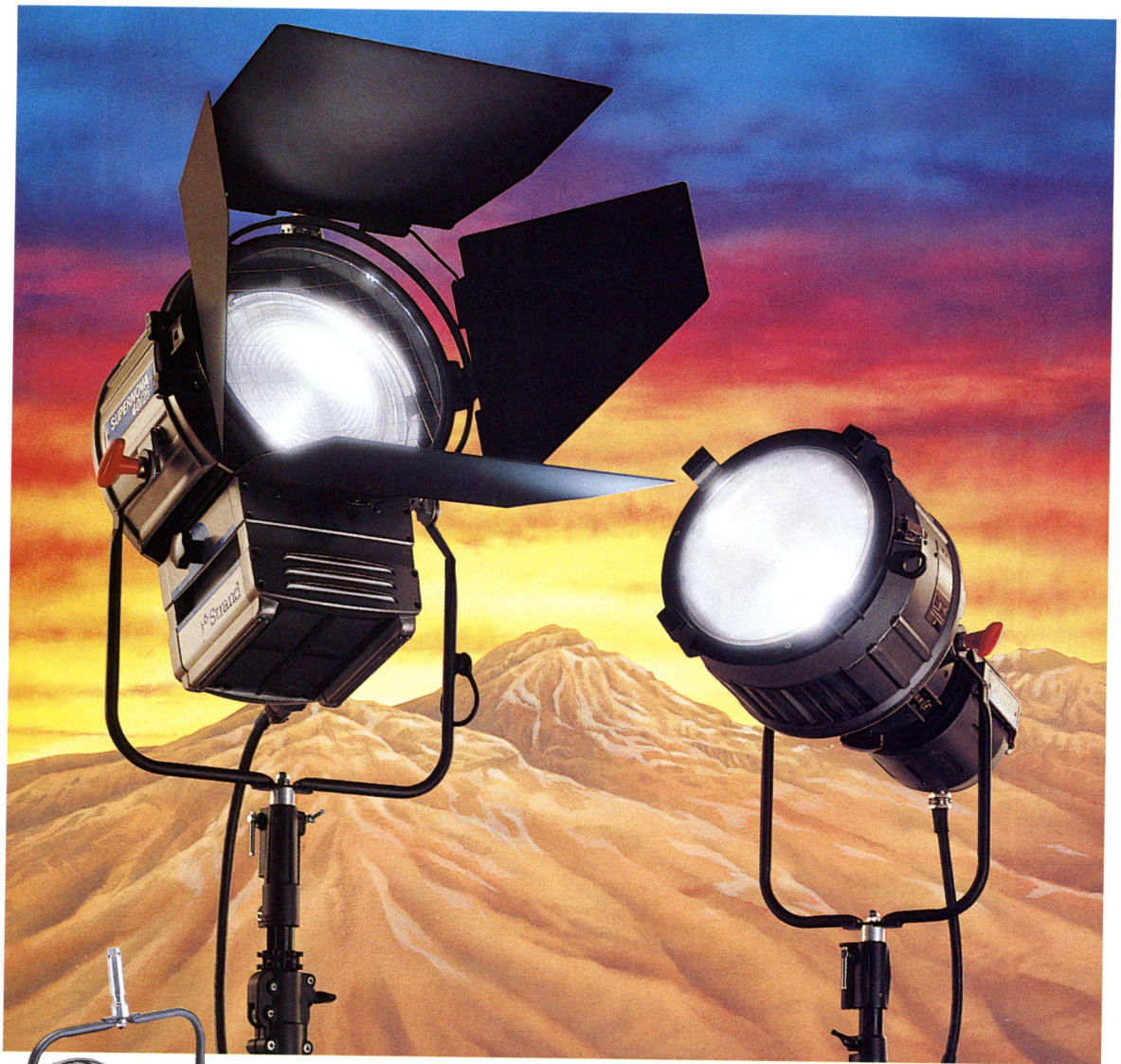

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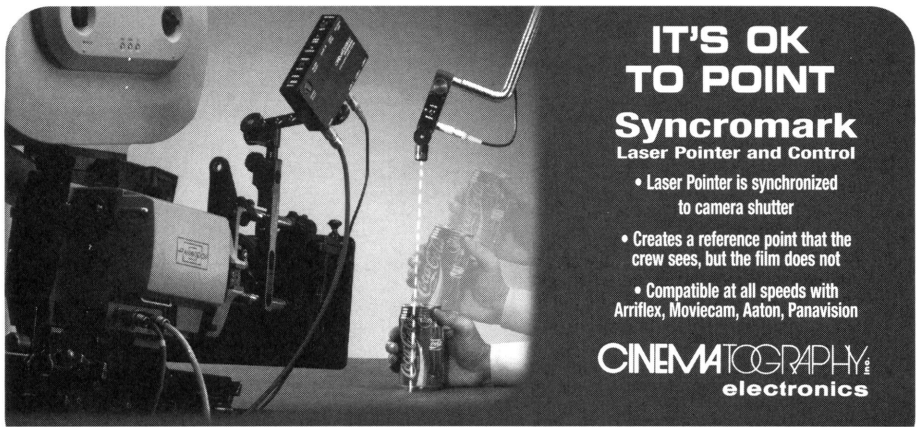

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were trying to look more like rock videos, so they asked me to shoot some of the jobs," he says. "Soon, they also started asking me to direct. Now I'm a director/cameraman at Shadowrock, but a big, big part of what I do is still cinematography. These Clothestime spots are a very good example of what's happening right now in commercials. As this whole global culture thing is happening, we're hearing music from all over the world in projects without really realizing it, and I think that's what's starting to happen visually as well. Advertising is a great place to be right now because it's a testing ground for radical new techniques."

According to Murray, his Clothestime spots would probably never have made it on the air as recently as five years ago. "We broke a lot of rules. We did beauty shots with 24mm lenses, and all the spots in the campaign deal with characters on the fringe and involve floating camera techniques as well as editing discontinuity," says Murray, who shot the spots with a Panavision camera mounted on an 11-foot jib arm.

"I've used hot heads before, but I personally want to have the camera in my hands when I shoot because it helps me to immediately react to the actors' performance," says Murray, who points out that there are no locked-down frames in the spots.

Murray intentionally shot his coverage with the jump-cut editing style in mind. "I don't want my work to be serendipitous," he says. "You see a lot of cinematographers going for 'the look,' but it's not really about 'the look' any more. It's gone so far past that. We as cameramen have to be able to previsualize how it will look and cut, and know what the emotional point of view will be while shooting. There has to be a reason for every shot now. I like to say about my work that within every frame there is a beautifully lit composition."

Spot: "Hairy Man" for Clothestime
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Production company: Shadowrock Productions
Agency: Mendelsohn/Zien Advertising, Los Angeles
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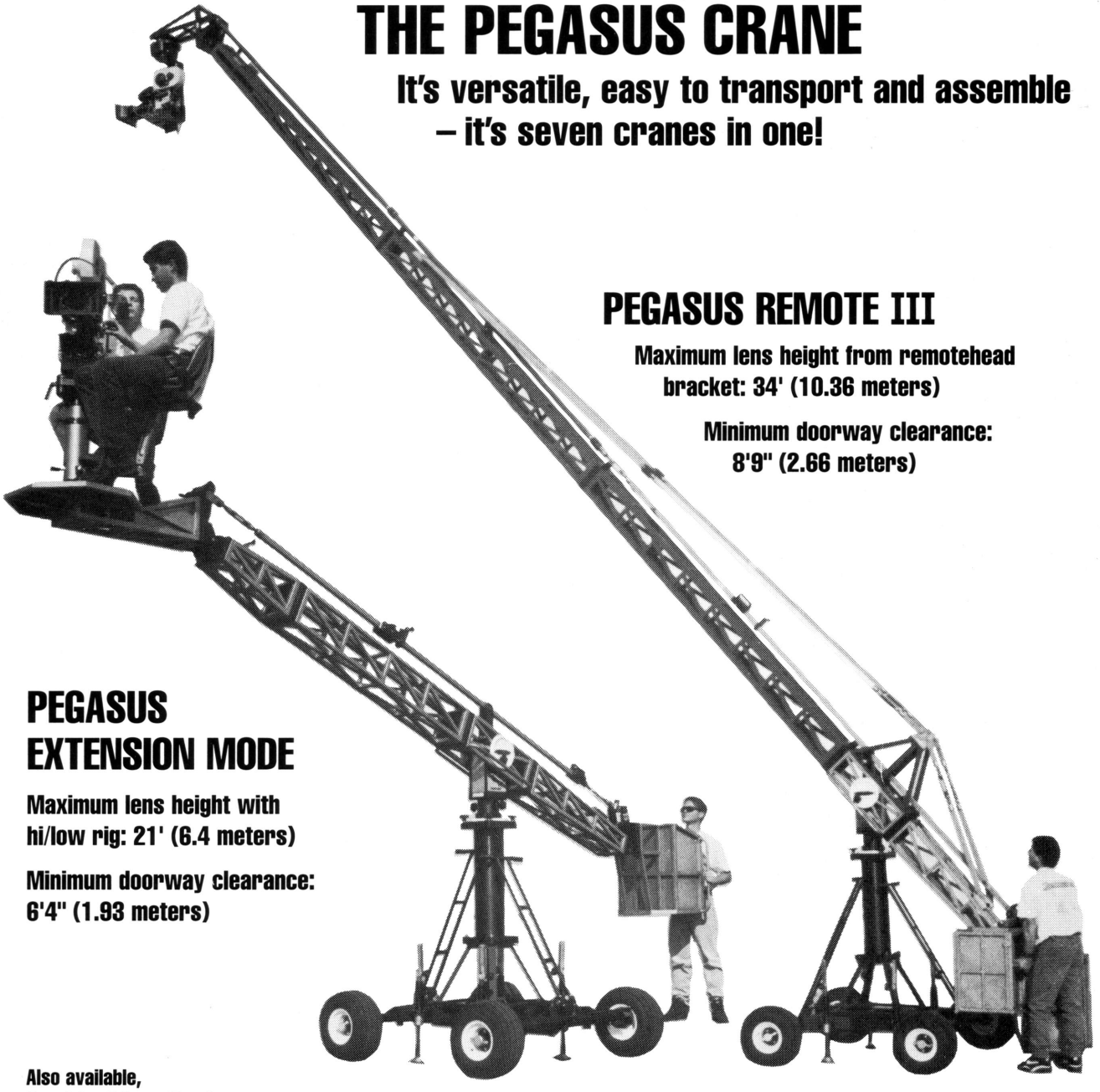

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Darkness Descends on *The X-Files*

Cinematographer John Bartley, CSC lends weekly series an eerie ambience.

by Chris Probst

"It has been said that the fear of the unknown is an irrational response to the excesses of the imagination. But our fear of the everyday, of the lurking stranger and the sound of footfalls on the stairs, the fear of violent death and the primitive impulse to survive, are as frightening as any X-File — as real as the acceptance that it could happen to you . . ."

— The X-Files' *Fox Mulder*

Things that go "bump" in the night, an unseen presence around the next corner, and a heart-stopping involuntary jump from your seat — this could be an apt synopsis for each Friday night when *The X-Files* creeps into homes and spooks its viewers. Known for its bold and eerie subject matter, brooding photography and unearthly characterizations, the series follows FBI special agents Fox Mulder (David Duchovny) and Dana Scully (Gillian Anderson) as they investigate episodes of the paranormal and macabre.

Created by executive producer Chris Carter as an homage to the Seventies' *Night Stalker* series, *The X-Files* has in its second season already surpassed its predecessor, which produced only 18 episodes before losing steam. "I wanted to scare the pants off people every week with good, tight mysteries and intelligent writing," says Carter, who is one of the show's writers. Carter also directed the episode "Duane Barry," which earned an ASC Award nomination for director of photography John S. Bartley. What had originally been a gamble for Twentieth Television has become a success story for bold programming choices and fresh storytelling.

Bartley started as a gaffer working with cinematographers Sven Nykvist, ASC, Frank Tidy and John Lindley, before graduating to director of photography on various TV movies and series such as *Wiseguy*, *Booker*, and *The Commish*. Gaffer David Tickell, key grip Al Campbell, operators Rod Pridy and John Clothier, and art director Graeme Murray have also been instrumental in establishing the foreboding style which has become the show's trademark.

Photo by Ken Staniforth and Bruce Macaulay, courtesy of Fox Broadcasting Company

Bartley meters series star David Duchovny aboard a retired frigate for the episode "End Game." Note the china-hat practical fixture utilizing a spotted bulb in upper left.

"We like it dark, moody, mysterious and sometimes claustrophobic," asserts Carter, who established the visual tone of the series in the pilot, which was shot by Thomas Del Ruth, ASC. "The pilot went some distance in setting up the show, but we've really refined it past that point. John Bartley and his crew are predominately responsible for that."

The show is shot in Vancouver, where a wide variety of anonymous locales can double for "just about anywhere in the USA," says Bartley, who notes that each episode is like shooting a new movie. Accordingly, he uses one of the largest lighting packages of any television show, ranging from two 20K tungsten units and two 18K HMIs down to Dedolights and KinoFlo's miniflos. Ironically, *The X-Files* is one of the darkest shows on television today; "make it dark" is the lighting team's mantra.

"Just when I think I've made it dark enough," says gaffer David Tickell, "John will make it darker. It's amazing how much light you actually use to make it dark. You put a little light in the background for separation, just to give some depth to the room, and then add lots of little lights here and there so the actors can walk in and out of something. I was at a party and people heard I was working on *The X-Files*, so they asked what I did. I told them I was responsible for the lack of lighting on the show!"

Shot with Arri 535 cameras, Zeiss lenses and in Super 35 at a 1.78:1 aspect ratio (but currently broadcast at 1.33:1), *The X-Files* balances every teaspoon of light with a pound of blood-sucking darkness. Indeed, Bartley rarely exposes faces at key, opting instead to underexpose faces a stop or more to leave some de-

tail shrouded and to set the general mood of the show. "It's so dark," says Tickell, "that John has no nails left — he chews off all his nails!" A running joke among the crew is the recurring stop of T2.8 for all interiors and night exteriors. "We light to a T2.0 and expose at T2.8," says Bartley, "I find that it's got a nice depth of field. It's easier to light to that, we can light fast, and it's not tough on the assistant (Marty McInally)."

In rendering the show's dark look, Bartley has become a true believer in Eastman Kodak's 5298 stock, although much of the first season was shot on 5293 rated at ASA 400. Pushing the emulsion to its limits has given *The X-Files* its signature look — almost complete darkness in the frame and yet identifiable action and characters. To achieve this eye-straining feat, Bartley and Tickell have worked out exacting methods to lighting for darkness.

"Because we play it so dark, we try to give it depth," says Tickell. "If we don't want it going black in the background, we'll put a blue glow in the background, say for a night scene — a nice ambient blue glow just so you can see that there is some detail in the background for separation. You can keep it very dark that way and it still gives the depth that [indicates that] you are somewhere, rather than just on a stage with a backdrop behind the actor. It shows you're actually at a location."

A surprising number of scenes leave characters in total silhouette. However, by incorporating separation lighting and silver "pebble" bounce (Roscoflex SS or Lee Soft Silver Reflector) as a front fill, Bartley is able to define facial features amid all the blackness. "If you put the light into the pebble-bounce," Bartley explains, "it starts to shine but it doesn't always put out enough light to light the subject. But you do get a nice kick in the eyes."

"If it's night," Tickell expands, "we'll a put a blue glow into it by shining a tweenie with full or double full blue into it. Because it's so directional, it will just light the area that you want — it's only got a two- to three-foot spread at the most. By putting that at a distance it picks up their eyes."

Allotted the standard eight-day shooting schedule for a one-hour series, Bartley and his team often pre-plan for unexpected changes in blocking or content, and will hang extra fixtures in case they are needed. Bartley also frequently uses on-set practicals. "We've gone to sets and used [nothing but] practicals," says Tickell. "We'll do that a lot — beef up any practical on set. We have new Osram quartz bulbs that we'll put in lamps, or some very spotty practical bulbs, and we'll light the whole set with those, just adding a little fill. The spotted bulbs are a good effect, especially when you're using smoke. They're 75 watts, but if you're four feet from it you can get a T22 right in the beam. They are so hot that if someone walks down a dark hallway, when they're underneath the light they're just glowing, and then they're back in the darkness.

"We try not to do anything that isn't natural," he continues. "If you walk into a room and see a lamp, then we'll bring the light source from where the lamp is. We try not to bring a light source from out of nowhere. A lot of times, you see a backlight on somebody, and even though it does pick up nicely and bring up their hair, giving them a nice edge, it doesn't seem natural. We try to find ways of putting a practical in the background — if you see it, you'll understand where the light is coming from.

"We rarely keep our lights straight tungsten. There's always something on them — if it's not ¼ CTS, it's ¼ CTB. If there are a lot of practicals in the room, we'll add ¼ CTS, and if it's cooler, like daylight, then we'll get into quarters and halves of blues."

In the episode "Irresistible," agents Mulder and Scully trail the handiwork of a necrophiliac murderer, Donnie Pfaster (Nick Chinlund), who preys upon both the living and the dead to fulfill his fetishes. It was Bartley's job to make the mousy character terrifying.

"We wanted to tell the audience this was a weird guy, that this was someone to watch

A scene in the episode "The Erlenmeyer Flask," depicting bodies in suspended animation, involved lighting dozens of tanks and the warehouse that contained the morbid setting. "There were china-hat practicals in the room with spotted PAR 30 bulbs in them," recounts gaffer David Tickell. "We had two to two-and-a-half feet under the tanks to light from. To get the spread, we needed a flat, broad source. The tanks had sheet-metal with holes in it on the bottom, so we underlit them with 1K nook-lights. It gave it a nice effect up through the water."

Right: ***A heavily smoked, dimly lit set and powerful sources punching through a window allow actors David Duchovny and Gillian Anderson to enter into another ominous confine.***
Below right: ***The exterior of a submarine emerging through ice on an arctic set was backlit from each corner of a blacked-out soundstage with 6K HMI fresnels on hoists. Depending on the angle, Bartley would use the lights to maintain backlighting, shutting off the fixtures that weren't needed.***

out for," says Bartley. One opportunity to do so came up in an interrogation scene with Mulder, Scully, and a suspect. Pfaster — the true murderer — stands poised at the bars of a cell directly behind them, evaluating Scully as his next victim. "We had just acquired some new blue fluorescent tubes, so blue they don't register on a color-temperature meter," Bartley recalls. "When I walked on the set and saw that the set decorator had put fluorescent fixtures all around, I put the blue fluorescent tubes in. Then above each jail cell I put a spotted PAR 64 light, one on each bunk, and used quite a bit of smoke. That's all that we had lighting the whole set. The actor (Chinlund) played the light that was on his forehead; he could feel it."

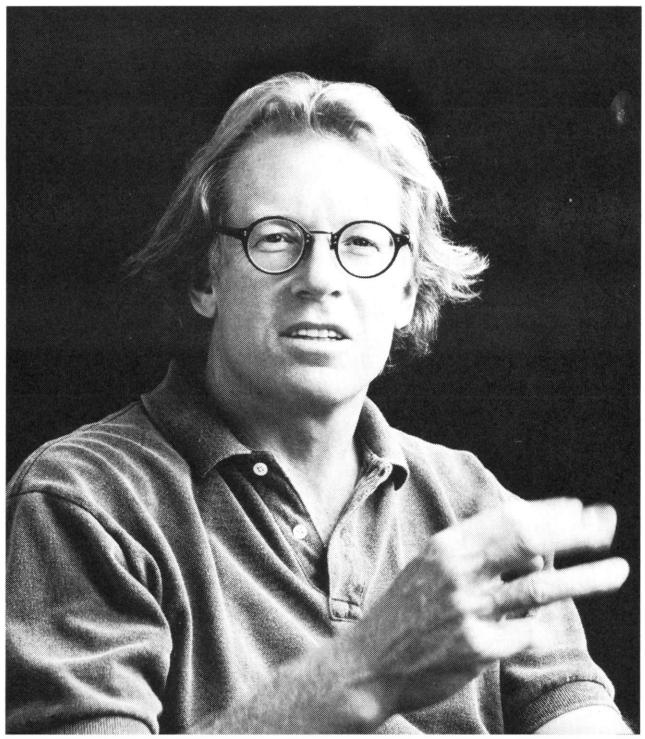
Another uncanny practical fixture used frequently is a Xenon flashlight. These are carried by the actors into various Dantean landscapes and cryptic chambers. "In 'Dod Kalm,' which ends up in a frigate that is supposed to have been dormant for

thirty years, the only lighting sources in the halls and cabins are the Xenon flashlights," recalls Bartley. "I use the pebble-bounce so the actors can shine the flashlights into the reflector, which bounces the light back into their faces. The actors are good; they can light themselves! Otherwise, I'll supplement the Xenons with a light; as they come closer I dim up the light as if it's coming off the flashlights."

Physical special effects also play an important role in the tone of the series. Employing the natural fill-effects of smoke on a set, Bartley is able to light with just the Xenon flashlights and have defined beams cutting through the darkness. "We smoke the sets quite a bit," Tickell adds, "sometimes heavier than others. You can put in just a little atmosphere and it'll change the look. You'll see practicals that you didn't notice before, and the smoke will pick up the light and bring the level up just a notch so you have a bit of an ambient glow throughout the whole set."

"John and I had a moment a little while ago where I thought he had added too much smoke to a scene," Carter admits. "It was a scene inside an FBI office and I got on the phone and said, 'Too smokey.' And he said, 'Not!' Again I said, '*Too* smokey!'

Eric Saarinen has been directing TV commercials since 1985, for such clients as Coca Cola, Kodak, Jamaica Tourism, Jeep, Levis, Mercedes Benz, Miller Beer, Porsche and Reebok. He won the 1990 Eastman Kodak Clio Award for Best Cinematography; and he was named 1990 Director Of The Year by Adweek. He is a partner at Plum Productions.



"For a deBeers diamonds commercial, I needed to romanticize reality to an extreme degree – on the underlying assumption that people who buy diamonds as gifts are temporarily out of their minds," says Eric Saarinen.

Great distortion

"I taped a single-element diopter to a bellows and shot some tests with a Nikon. Huge amounts of spherical and chromatic distortion and flare, which was great. But no focussing, no iris, no marked f/stops. When I took the idea to Clairmont, Denny and his people took an immediate interest."

Custom rig

"They machined links so we could join two different kinds of Nikon

"At Clairmont, they don't just tell me what they have. They ask me what I'll need; then they design and build it," says Director/Cameraman Eric Saarinen

bellows system together. And they built bridge adapters, to mount those different bellows onto extra-long ARRI rods. They put PL mounts on one end of the bellows, 52mm filter threads on the other."

Free testing

"I spent several days at Clairmont, experimenting and testing, with their help. They let me use one of their cameras, to shoot tests in a rose garden. No charge."

Stacked diopters

"By altering the bellows length and stacking various 52mm diopters, I got different focal lengths. The f/stop was bellows length divided by lens diameter. We focussed and framed by moving the camera and bellows back or forward until the image was the right size and as sharp as it would ever be."

Wooden case

"It became quite an elaborate system. Clairmont put it all in a foam-cutout wooden case for me. Probably about fifty parts, including positive and meniscus diopters, 85 and ND filters, rods, adapters, tape measures and so on."

Impressionist

"We shot people and scenics in Germany and the South of France. People at sidewalk cafes, on cobbled streets at night. The results were suitably impressionistic and romantic."

Helpful

"That job was just one of many on which I got singular help from Denny," says Mr. Saarinen. "Clairmont takes over where the others leave off."

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And he said, *'Not!'* Ultimately, I think he was right. The scene was a chew-out session between Skinner (Mulder's superior, played by Mitch Pileggi) and Mulder, and was lit with a half-light on Skinner's face. The use of the smoke gave the scene a nice claustrophobic feeling of compression that I really liked. I attribute that to the use of the atmosphere. Even though I don't like to bring the creepy world that's outside into the FBI, I think in this case he made the scene better."

Frightening viewers is the *The X-Files' raison d'être*, so it follows that a good majority of the scenes occur at night. For Tickell, the opportunity to start with total black and paint in those menacing shadows and eerie light patterns makes his job all the more enjoyable.

"I love to light at night; it's like giving yourself a big blank canvas and you go out and paint — a splash of light here, a little splash there. Lighting back alleys, city streets — you can use the practical lights that exist, or you've got fire escapes that you can put light through to put patterns on the wall or fences."

Again working with the trusty T2.8 exposure, Bartley employs for nighttime exteriors his two uncorrected 18K HMIs on cranes for backlight, giving him a T1.4 to T1.4/2.0, and fills in the faces to a T1.0 to T1.4 depending on the subject matter. To keep the lighting naturalistic and efficient, light sources are often motivated by existing streetlights and corrected to match what's already at a location. "We have the 18K HMIs for backlight," adds Tickell. "Then we'll use the existing streetlights but enhance them just so it looks like we're using the practicals that are out there. We found that Lee #232 Super White Flame gels match sodiums very closely, so we'll put that on tungstens. You may see a wash of light that looks like it's coming from a streetlight, but it's us putting it on a building or street."

The episode "Duane Barry" also marked the first time Bartley and Chris Carter worked together directly on the set. "Previously, it had all been verbal communication between John and me about what the show should look like," Carter explains. "Then it was left to John and the directors to interpret whatever that would be. With 'Duane Barry' I took the chance to direct an episode, which was a tremendous amount of work; my hands were [already] in so many phases of the production, as writer and executive producer, and I also end up producing a lot of inserts. But it was a tremendous experience. I had never directed before, and even though I had very definite ideas, John shouldered a lot of the weight of my inexperience so that I was able to communicate my ideas onto film directly."

> "You don't want to show the audience too much. You just want to feel that there's something there."
>
> — John Bartley

A considerable amount of "Duane Barry" takes place in a travel agency, where Duane (Steve Railsback) has taken the employees hostage in the hope that the aliens he believes are trying to abduct him will take one of the hostages instead. After a sudden unexplained blast of blinding white light, however, the power in the building shuts down and the only interior illumination provided is from emergency backup lights. "Those lights didn't go by chance," says Carter. "The reason I had a power outage was that I wanted pools of light created by the auxiliary emergency lights — it helped set a mood.

"When Mulder and a paramedic first enter the travel agency and Duane Barry shuffles sideways out of the darkness with his gun pointed at them, he comes out of *complete* darkness. It's risky! I remember John lighting that scene and I said to John, 'Darker! I want him coming out of blackness; I do not want to see where he's coming from.' And he did it and I think what resulted is one of the best images of the show."

Another striking image in "Duane Barry" is inside an alien ship where Duane is being "tested." For the scene, art director Graeme Murray designed and made a glass operating table inscribed with strange alien patterns. "Graeme did a wonderful job designing that table," Bartley recalls. "When I came in there and saw it I said, 'We can have fun with this.'"

The production team built the table, which was a big sheet of glass painted black with clear strips in a grid-type pattern, placed over the top of a pit at the studio. "We then put a 10K down in the pit and shined it up through the glass," Tickell recalls, "smoking the room so that you have all of these little rays shining up through the pattern in the glass. Then we used a couple of lekos to highlight his face here and there."

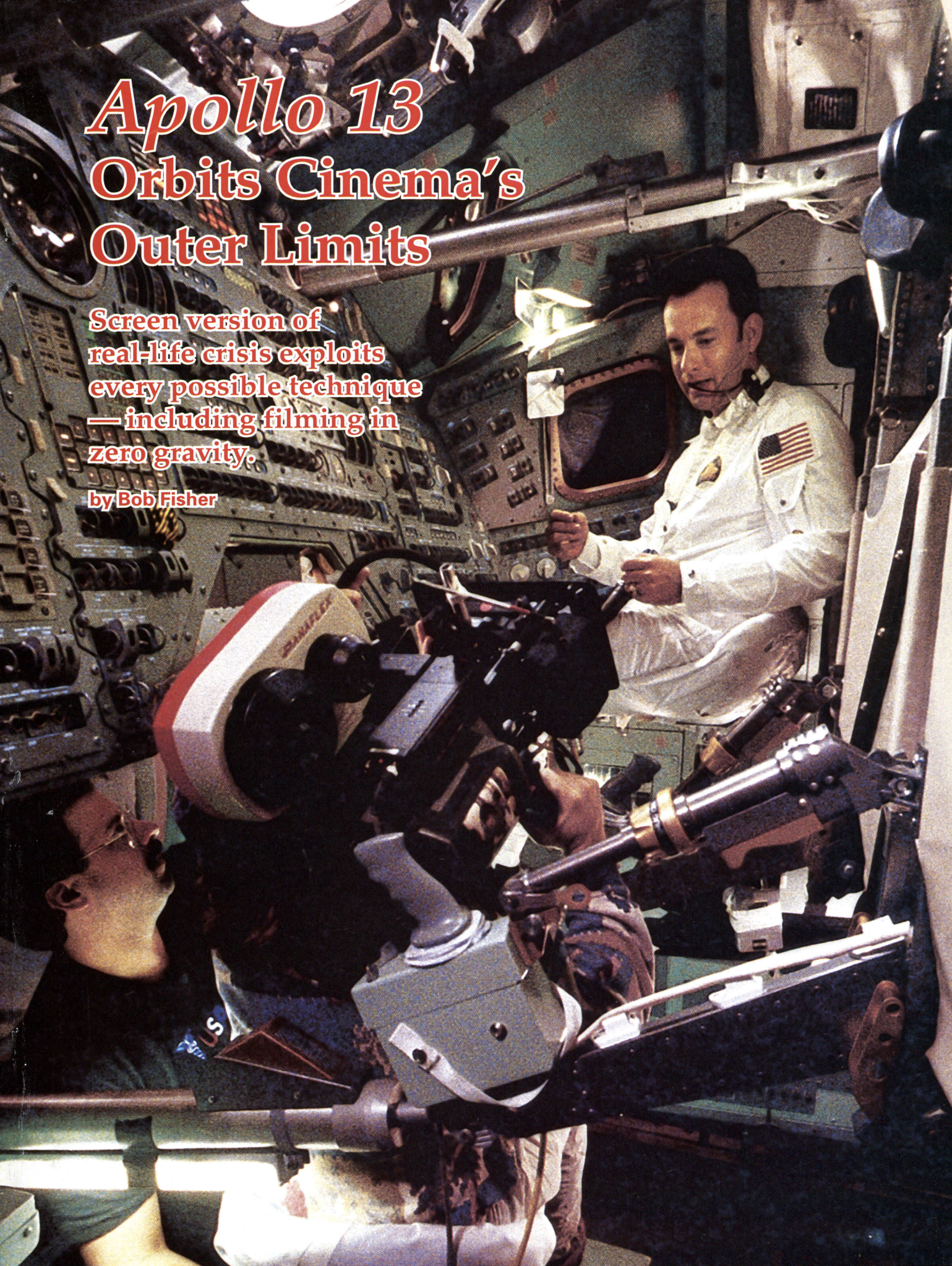
Having won the Golden Globe Award for Best Dramatic Series, *The X-Files* seems to be about testing limits. And with a photographic style ranging from an abyss of blackness to blinding white light, Bartley is also skirting the boundaries of NTSC's transmission capabilities. "You don't want to show the audience too much. You just want to feel that there's something there. It's hard to keep that dark look."

Though the show faces a brutal time slot, "I think it's the Friday night thing now," says Tickell. "People gather, douse the lights and watch *The X-Files*."

Apollo 13 Orbits Cinema's Outer Limits

Screen version of real-life crisis exploits every possible technique — including filming in zero gravity.

by Bob Fisher



Previous page: ***Tom Hanks as astronaut Jim Lovell in the command module mockup on stage at Universal. Second-unit gaffer Steve Chandler is visible at lower left, assisting the operator in giving the camera the illusion of weightlessness.*** **This page:** ***Dean Cundey poses on the Universal backlot before a reconstruction of NASA's moon simulation, where astronauts practiced taking samples and negotiating the ladder as part of their training.***

IN TODAY'S HIGH-TECH WORLD, shuttle launches occupy the tail end of the TV news, alongside pandas and pie-eating contests. During the 1960s, however, the space race was the defining event of the era. It was high drama — the U.S. versus the Soviets. Which country would be the first to put a man on the moon? Would that strategic advantage tilt the balance of world power? A Saturn booster launch sending an Apollo spaceship to the moon drew people to their televisions in droves. People set their alarm clocks so as not to miss a 3 a.m. launch.

Many years later, NASA officials rationalized the space race by citing the value of Teflon and other such discoveries that had borne fruit in the form of new medical knowledge, consumer products, and advancements in industry. But there were no doubts in 1961 — the United States had entered the space race to win.

The space agency enjoyed much more public support in the pre-Watergate era; there was something magical about NASA, and the astronauts were seemingly invincible heroes seen through the filter of the TV screen.

After two moon trips, success was so predictable that interest began to wane. By the spring of 1970, the public was also distracted by the war in Vietnam. The Nixon Administration was trimming NASA's budget after the gung-ho Kennedy years, and Bob Gilruth, director of NASA's Manned Space Center, was privately calling for the end of manned space flights, not wanting to risk a tragic accident which could be devastating for the agency.

In this pessimistic atmosphere, Apollo 13 was launched on April 13, 1970. The astronauts were Jim Lovell, Jack Swigert and Fred Haise. Two days into the mission, Swigert flipped a switch and a dull bang resounded through the space vehicle. An alarm rang. MAIN B UNDERVOLT glowed red on the instrument panel.

It was quickly determined that one of the two main oxygen tanks had exploded. Mission Control in Houston calculated that there was sufficient oxygen remaining to sustain the three astronauts for 45 hours. The problem: it would take them 90 hours to return to Earth. (Subsequent investigations revealed that a component made by a minor contractor didn't comply with specifications. NASA paid a giant price for that small deviation: the moon landing was aborted.)

Now, 25 years later, the story of that mission is a motion picture, directed by Ron Howard. Howard's feature film credits as a director include *Splash, Cocoon, Willow, Parenthood, Backdraft, Far and Away* and *The Paper*, all made with his friend and partner at Imagine Entertainment, producer Brian Grazer.

Howard assembled a formidable cast for his latest project, including Tom Hanks, Kevin Bacon, Bill Paxton, Kathleen Quinlan, Gary Sinise and Ed Harris. To translate the drama into moving images, he chose cinematographer Dean Cundey, ASC, whose credits during recent years include a slew of effects-laden pictures — the *Back to the Future* trilogy, *Who Framed Roger Rabbit?, Death Becomes Her, Hook, Jurassic Park* and *The Flintstones*. Having just completed principal photography on *Casper*, Cundey had intended to direct and shoot commercials while waiting for the right script, but it came along a lot quicker than he anticipated.

Apollo 13 represents a departure for Howard, because probably half of the people living in the U.S. today watched the original version of the story on live TV. Millions of them still have memories of the Apollo 13 mission, and millions of others have seen the incident via documentary footage. The hardcore space aficionados in the audience for *Apollo 13* will bring their expectations to the theater.

Cundey himself brings memories to the project. "I was a fan of the space program," he recalls. "I remember a school project where I built a model of the Explorer, the American answer to Sputnik."

One of Cundey's hobbies in elementary school was building miniature sets and creating imaginary worlds filled with make-believe actors and actresses. In high school, he discovered *American Cinematographer* magazine and became an avid fan.

At UCLA, where he studied architecture and cinema, he took a class taught by James Wong Howe, ASC, who was lecturing about cinematography while preparing to shoot *The Molly Maguires*. Cundey has vivid memories of Howe using light and shadows on a bare three-wall set to create every imaginable setting and mood. "That's when I started thinking about becoming a cinematographer," Cundey reminisces. "Jimmy said that as he got older, he learned to simplify by using less light and equipment. That made a lasting impression."

After graduation, he scrambled for several years doing pickup shots and inserts and assisting editors who were cutting low-budget features.

Photos by Ron Batzdorff and Robert Markowitz, courtesy of Universal City Studios, Inc.

He scraped together enough money to outfit a small van with a camera, some lenses and lighting equipment and rented it to low-budget film producers; he was usually part of the package. At first he worked as a gaffer or technician, but he finally got a chance to shoot when a cinematographer scheduled to work on a film canceled at the last moment.

Initially, Cundey worked on horror genre flicks with minuscule budgets. His breakthrough film was *Halloween*, directed by John Carpenter. That early slasher effort led to *Escape from New York*, *Romancing the Stone* and others. Cundey earned an Oscar nomination for *Roger Rabbit*, the film that established him as a director of photography who could handle films with complicated, high-tech effects.

During their first talks, Howard and Cundey focused on how to deal with the fact that so many people have specific memories of the space program, and studied hours of vintage TV programs. The original TV transmissions from Apollo missions were very low-resolution video seen through the eye of a wide-angle lens, the cameras either positioned in the corners of the capsules or handheld. Although Howard and Cundey decided that they didn't want *Apollo 13* to look like a documentary, they did want a realistic feel, and the inside of the capsule, in which about a third of the movie takes place, was meticulously authentic: many of the switches, dials, buttons and similar components came from Apollo capsules.

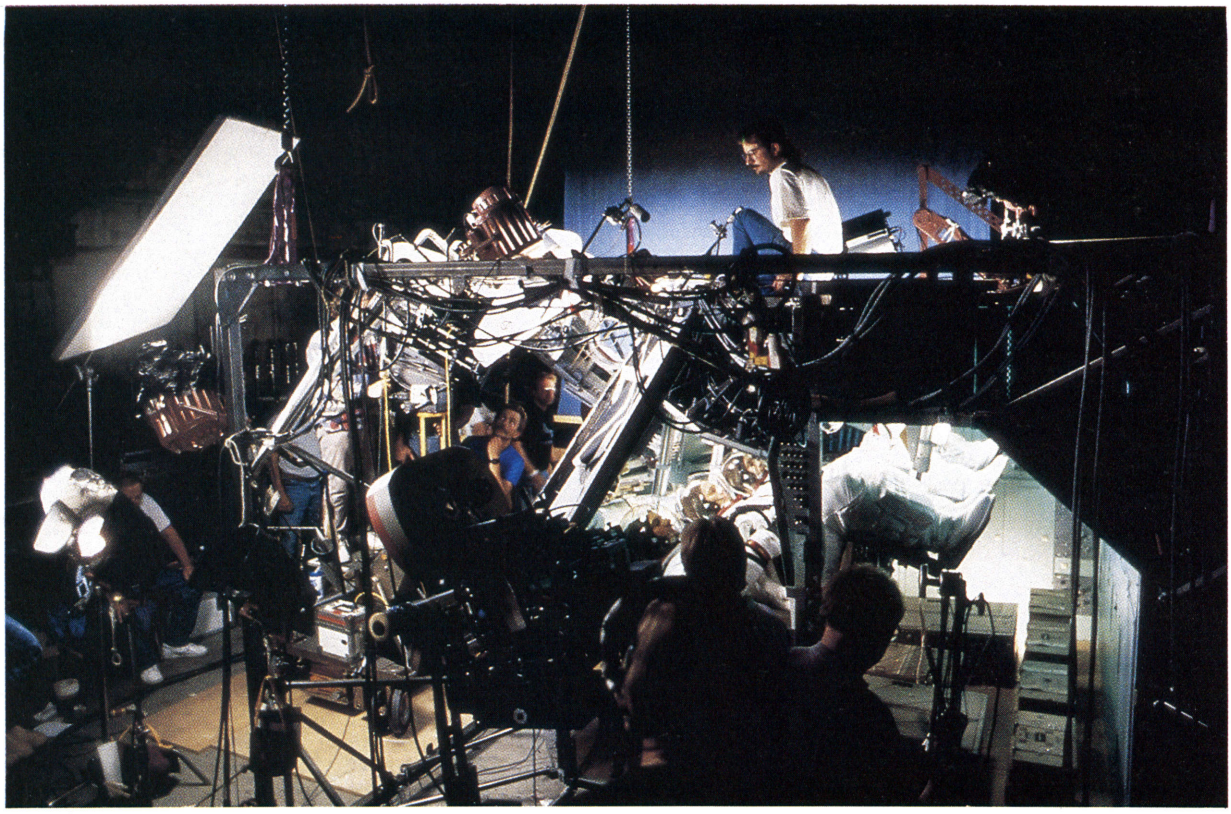
"It was a very small and confined space," Cundey points out, "and we agreed that it was important not to violate the fourth wall. The camera always had to feel as if it was inside the capsule.

"We decided to keep the camera moving, if only slightly. The lighting inside the capsule came from realistic sources. The capsule was always moving and rotating — they called it the barbecue roll. The rotation was designed to keep the skin of the capsule evenly heated. The sunlight coming through the windows would dance across the faces and bodies of the astronauts, light the back wall, and then go dark. We emulated that look."

Apollo 13 astronaut Jim Lovell served as the official advisor to the filmmakers and was present in that capacity during most of preproduction and the early shooting. His insights and precise memories helped the filmmakers understand how the astronauts felt. According to Cundey, Lovell provided more than background.

"One day we were getting ready to shoot a scene in a mockup capsule," Cundey recalls. "I can picture Jim explaining to the actors, Ron and myself exactly what happened. Every detail of each procedure was etched in his memory. He described how they got on and off the couches, and into the tunnel

Above: ***In the lunar module mockup on the stage, weightlessness was simulated with the help of harnesses (top) and "teeter-totters" (center and right). Part of the trick, according to Cundey, was careful framing to hide the rigs.*** **Right:** ***From left to right, Paxton, Bacon and Hanks as they prepare for the launch sequence.***



The command module set. Cundey had the camera on a Crane 88 with a CamRemote. Bob Nettman designed an additional roll axis into the CamRemote, again to enhance the illusion of zero gravity.

which linked the main capsule with the lunar module. He described how they accessed various parts of the capsule. By the end of that day, the actors knew exactly what the astronauts had done and what was in their minds.

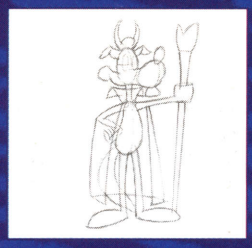
"Ron wanted the audience to understand the incredible odds that Lovell, Swigert and Haise had to overcome to survive," he says. "It was a triumph of the human spirit over the failure of technology, and it was an amazing feat. Everyone assumed the technology was infallible. The astronauts proved that their courage and ingenuity, and the resourcefulness of the people at Mission Control, was what really mattered."

Among the first decisions that Howard and Cundey made was to record the images in Super 35 format. Cundey explains that when they parsed the script visually, they realized that there were many scenes where the audience would be looking at the astronauts lined up in a row. It was important to show how the men related and reacted to each other within the environment of the confined space.

"It was like shooting a movie about three guys in a Volkswagen," continues Cundey. "I don't recall the exact dimensions of the capsule set: it was just wide enough for three guys to sit side by side and be barely comfortable. The space was so confined in the actual capsule that in order to move around efficiently, you had to be weightless. That was the only way you could crawl in and out of the seats and get to the back where the equipment was stowed.

"Rather than cutting from two-shots to singles, Ron wanted to play a lot of those moments with all three astronauts on the screen. He also wanted the audience to feel how small Apollo was compared to the infinite expanse of outer space in exterior scenes. Those considerations defined the need for a wide-screen image. At first, we considered shooting in anamorphic format. But I wanted to use spherical lenses, partially for depth of field. More importantly, there are scenes where I wanted to be in sharp focus with the lens only inches away from a character without violating the fourth wall and getting too far away with the camera. I don't think we were ever more than two or three feet away from the actors. It's very intimate."

Cundey initially felt a certain amount of trepidation about shooting in the Super 35 format, which requires making an optical blowup by extracting a comparatively small portion of the image area: he was concerned about whether that would degrade the quality of the images. In his research, Cundey spoke with the people at Digital Domain who had handled the visual effects for *True Lies*, which was shot on Super 35 because director James Cameron generally prefers the format [see *AC* September 1994]. They informed him that some of the plate work had been photographed in VistaVision format, but that most of the optical elements had been recorded in four-perf Super 35.



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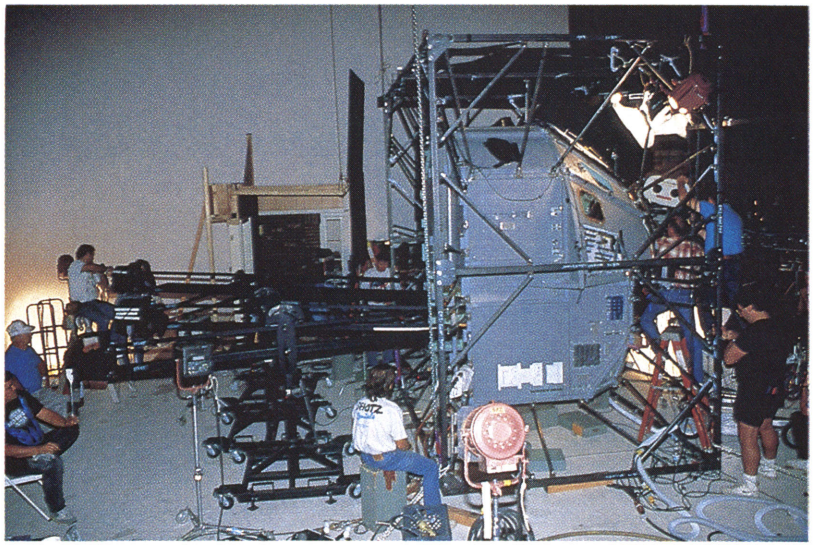

This complicated rig allowed Howard and Cundey to rotate the entire mockup, as well as lights and camera (at right), independently or in combination, and yet maintain consistency in the lighting. Removable panels enabled lights and lenses to reach the actors from a variety of angles. At left are the three "teeter-totters" counterbalancing the actors within.

"I was very impressed with the quality of the release prints," says Cundey. "People generally shoot tests and look at work prints. The problem is that by the time the film goes through all of the duping to get release prints, the image is several generations removed from the workprint. You are bound to be disappointed.

"I also looked at Philippe Rousselot's work in Super 35 on *Interview with the Vampire* [see *AC* January 1995]. It was stunning. We shot some Super 35 tests and took them through release printing. I was very pleased. A lot of this has to do with improvements in raw stocks. There is much less grain and truer colors." Cundey also lauded improvements in the Eastman EXR 5244 color intermediate film, which recently earned a technical Oscar for Kodak.

Most of *Apollo 13* was filmed on stages at Universal Studios, with some exteriors shot around Los Angeles. Digital Domain created exterior scenes in deep space using large-scale miniatures and by digitally compositing other picture elements. Cundey spent some time at the visual effects facility helping to ensure the continuity of the look, and also to educate himself.

The basic question for Cundey was how to make the audience believe they were witnessing the astronauts hurtling through space on the way to the moon. Part of the difficulty was that the illusion had to be sustained through a large part of the picture. To this end, Cundey elected to light the capsule realistically from apparent practical sources, using small fluorescent bulbs built into the practical units on the set. He varied the fluorescent bulbs based on the colors: a blue-green light was used in practicals, and a whiter fluorescent was employed on the instrument panels.

"The sunlight coming through the windows was another main source of light, especially after the astronauts begin to shut down all the power to save the batteries," Cundey says. "At that point, there is no interior source lighting. The sunlight is very directional and harsh. It bounces around the capsule, giving us a bit of ambient fill on the shadow sides of faces."

Cundey created the illusion with a programmable Cyberlight, which would more typically be used for rock concerts. He explains that the bulb is Xenon, and that a mirror is used to direct the beam of light on a programmable moving path. An operator moved the light, which was mounted on a crane arm, up, down, and back and forth, and the computer kept the beam aimed through the window. Cundey was thus able to direct this shaft of sunlight to any part of the capsule. The light was programmed to move at a consistent speed and angle so footage from different takes would intercut perfectly. "It feels like direct sunlight, and we had very precise control over what was lit and what was dark," he says. "We created some very interesting looks with silhouettes of characters, and you always have a sense that the light is coming through a window from the sun."

To create the background stars and space, Cundey used a fiberoptic starfield behind the windows. "We considered building a starfield until we found one," he says. "It's a large black velvet backing with little tiny fiberoptic plastic heads that poke through the material. It looks like thousands of pinpoints of starlight. It's a rental property used for stage shows and television programs. We hung it on a pipe that we were able to raise and lower and move sideways to create the illusion that the capsule was traveling through space."

Another concern for Cundey was simulating zero gravity. The traditional method is to float objects and people on wires and harnesses. "We could see what it looked like on the TV images, and Jim Lovell also described what zero gravity feels like," Cundey says. "How do you get the actors floating, feeling comfortable and looking natural? We tested all kinds of things: we shot tests with the actors seated on teeter-totters and we also used wire removal. We tried turning the capsule upside-down with the actors rigged in harnesses." Cundey says that those were the most convincing images, but were too hard on the actors: their faces turned red because blood was rushing to their heads. Howard decided that while some of that footage would be useful, it wasn't practical to shoot a third to half of the film upside-down.

Especially difficult was trying to photograph the actors moving from the lunar module to

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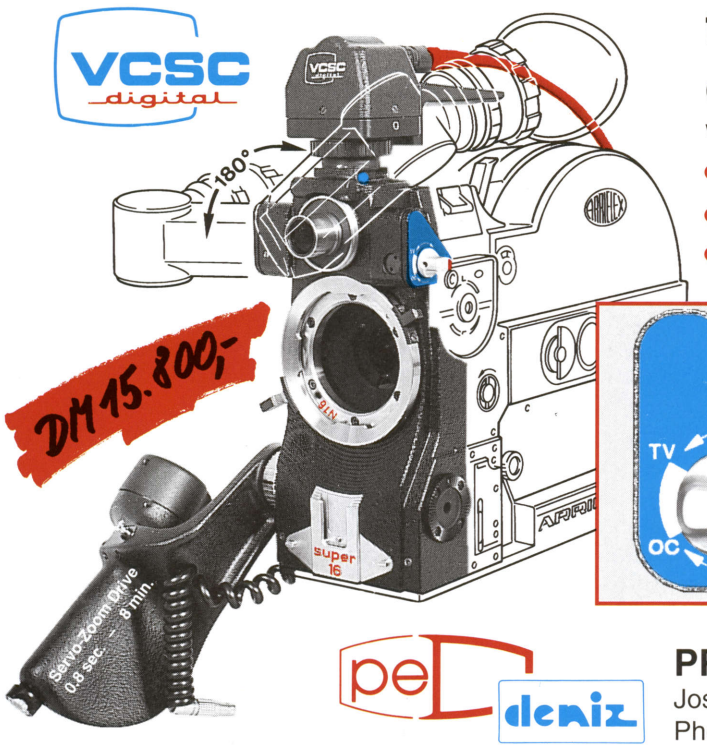

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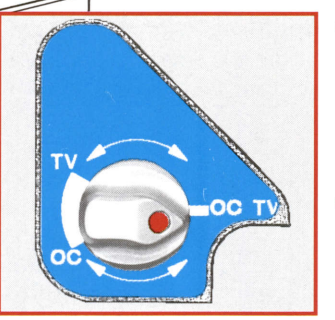

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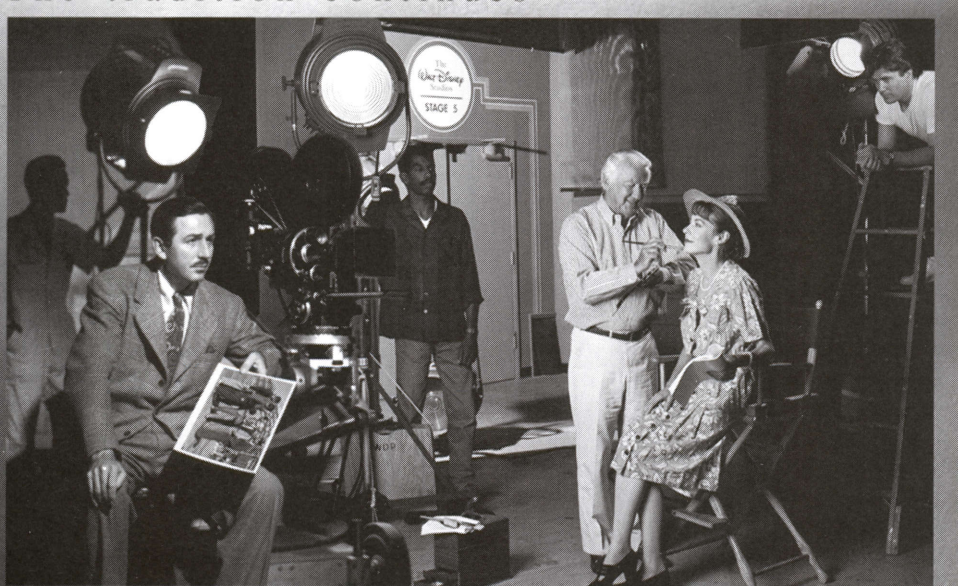

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the command module through a small tunnel. "No matter what we tried, we couldn't make them look like they were swimming in air through this connecting tunnel," he says. "It was an essential part of the action. Then someone remembered that NASA has an airplane they use for testing weightlessness and for training people in weightless situations."

The plane, which had no seats, just an open bay, would climb 30,000 feet to the top of a parabola and then dive, creating a 23-second interval of weightlessness. Howard, Hanks, Paxton, Sinise, Bacon and executive producer Todd Hallowell attended a NASA space camp in Houston, went up on the KC 135 airline, and flew through 40 parabolas in one morning. They learned what it felt like to be weightless, how to move, and how to catch and handle floating objects.

The team asked NASA if there was any way they could build part of the set — the tunnel, and maybe also a small part of the capsule — on the airplane, so as to film parts of the scene in real weightlessness. NASA, which normally only makes the plane available to contractors testing equipment and to research projects, agreed.

"As we were breaking down the sequences, Ron was selecting scenes to shoot on the plane. He kept adding bits and pieces," Cundey says. "We built a scaled-down set, and everyone was surprised that a pretty good piece of it fit on the plane. I don't think actors have ever been filmed in a weightless environment before. There was nothing to refer to. We improvised."

Cundey pre-lit the set during a weekend. The plan was to shoot film of actors floating with a second-unit crew, while Howard and Cundey kept working on dramatic scenes at the studio. Cundey delegated the second-unit work to David Knoll, who had shot the aerial footage in *Jurassic Park* and had also worked with Cundey on a number of other films.

In the end, Howard decided to spend several days in Houston with the second-unit crew. "He felt he could get some good performance moments by working with the actors in a weightless environment," Cundey says. "Todd (Hallowell) and I were shooting other scenes in Los Angeles, and I would go to dailies in the morning and look at Ron's film, and then I'd phone him and make suggestions. They spent about ten days in Houston and came back with incredible footage. Ron appealed to management at Universal Studios to give us time to shoot more footage in that weightless environment. He wanted to build part of the lunar module and other sets for shooting on the plane." When principal photography wrapped, Howard and the weightless-unit crew and the actors in the astronaut roles went back to Houston for more scenes.

"The footage is amazing," says Cundey. "The way objects move in a weightless environment with multi-axis rotations is incomparable. You can't duplicate that feeling of reality in any other way. I think it's a major factor in creating an illusion which makes the audience temporarily forget they aren't watching real people floating around in a tiny capsule in deep space."

The weightlessness makes the handheld camera work feel like the ultimate Steadicam shot, Cundey explains. The camera crew would find things to hold on to, and the operator would wedge himself into a solid spot, holding the camera with his fingertips. A video tap on the camera allowed Howard to see if he was getting what he wanted.

"If there was ever a motivation for getting shots in one take, this was it," says Cundey. "When they pulled out of the dive, they were at 2 Gs, so they had to quickly find a safe spot to sit and make sure that their arms weren't twisted underneath them. It didn't take long to learn that you didn't want to land on some part of the set that was going to cause you pain."

This unusual soundstage required innovative adaptations of other filmmaking technologies — the video tap, for example. The more traditional capsule sets benefitted as well. "We used the new Panavision color video assist throughout the picture," Cundey says. "It was a great help because so much occurs in the capsule, and we were lucky to get a camera and operator in there, let alone anybody else. We had to evaluate everything off of the video tap. It became a crucial tool. There were two complete capsule sets, and we had a second unit setting up smaller shots which made important story points — a hand on a switch, a light going off, things like that. Ron wanted to spend his time with the actors, so they would run the second-unit video tap over to him on the other stage, and he basically directed the second unit off of the color tapes."

Cundey shot most of *Apollo 13* with 20mm and 35mm Primo lenses, which enabled him to show the astronauts in their environment, and also replicated the dimensions of the look people remembered on TV. For close-ups, he usually chose a 75mm Primo.

"So much of what we remember seeing transmitted back from space were degraded images compared to the rest of the news," Cundey says. "There was an obvious difference between those images and everything else. The images from the capsule were more contrasty, darker and noisier than news film or the live shots of the anchors.

"We discussed degrading the image inside the capsule. We shot tests with 5296, 5298 and 5293, pushing them by one or two stops. Unfortunately, we couldn't make it look bad enough. No offense to Kodak, but it never really

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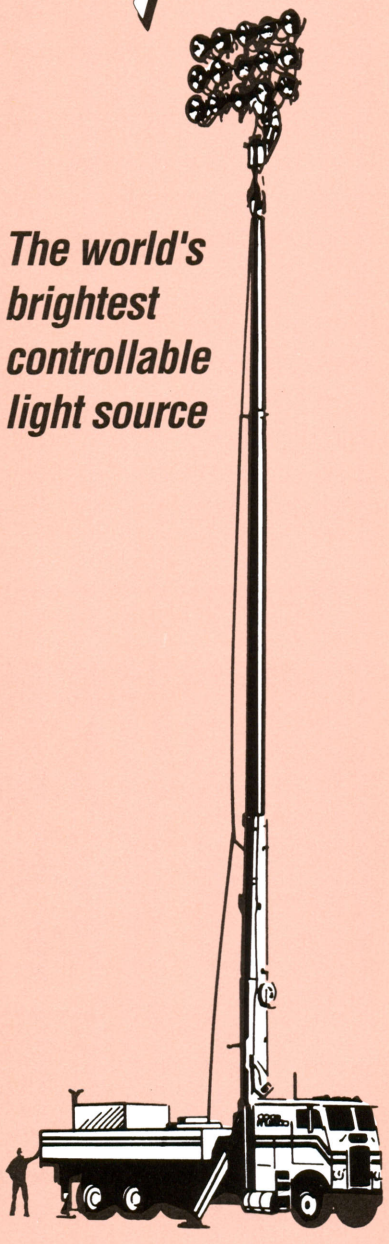
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quite took on that bad look we wanted."

Instead, Cundey decided to expose the film at the normal exposure index and degrade the quality of the image in postproduction by going through two or three generations of duping. (Those tests were still underway as this issue went to press.) Howard and Cundey were looking for the point where a degraded image replicates reality without becoming a distraction.

"I used 5293 and 5298 in the capsule," he says. "It's interesting having all of these different film speeds and color temperatures. You can choose the film that does the best job in each situation.

"I ended up using a little of everything. There were times when Ron wanted a mobile camera. We used a pitching-lens snorkel camera that allowed us to pan 360 degrees. We were very close to the control panel, and then we panned to the faces. We couldn't possibly make that kind of physical move with a regular camera in a space that tight. You lose light in the viewing system with the snorkel camera, and the lens only opens up to T5.6. In order to hold depth of field, I underexposed the 5298 film [rated for an exposure index of 500] by a stop, and intercut it with footage that was exposed normally. That's one of the advantages of having all these different films. You can solve unique problems, and keep a consistent look."

All of the walls on the capsule sets were wild, built with removable panels on a steel framework. Cundey could also saw portions of the frame away when he had to enter a space from a particular angle or direction. The camera crane came into the set from every imaginable direction and angle (straight overhead, from the side, or from an angle very close to the ground), revealing the entire capsule to the audience.

Cundey's crew invented a handheld technique that they dubbed "zero G cam:" they constructed a nylon web designed to cradle a Panaflex camera, brought a cable in from overhead, and used a pulley and a counterbalance weight to make the camera essentially weightless. The operator was able to move freely and could make a variety of subtle moves.

"I had a great crew," says Cundey. "The operators were Ray Stella (SOC), Casey Hotchkiss and Steve Tate. Dave Luckenbach handled the Steadicam. The assistants were Clyde Bryan, Larry Davis and Jolanda Wipfli, and the loaders were Steve Sfesku and Trevor Loomis."

"It was interesting watching Dave Scott, the astronaut who was another of our technical advisors," says Cundey. "Ron would ask him, 'In this sequence, what would the right procedure have been?' Dave would answer, 'Let's look at the transcripts.' He checked the transcripts of communication between the astronauts and Mission Control. Sometimes it was the first time he realized the gravity of the situation. I remember him saying, 'Gee, these guys were really in trouble. I had no idea.' That really amplified what Lovell, Swigert and Haise accomplished. We really gained a deeper appreciation for their ingenuity and courage as we came to fully understand how they overcame their peril."

Cundey reports that Howard lived up to his sterling reputation. "Ron is a genuinely nice guy. That's important, because it means there isn't a lot of unnecessary tension on the set. Even with all of the testing and preproduction planning, movies are made when you are on the set or location with the actors. Most films evolve over a period of time. They take on their own life. It's such a collaborative art that until you get everyone moving in the same direction, you can't define a cohesive look."

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Digital Domain Provides Rocket Fuel for *Apollo 13*

Computers help create a seamless vision of space mission.

by Ron Magid

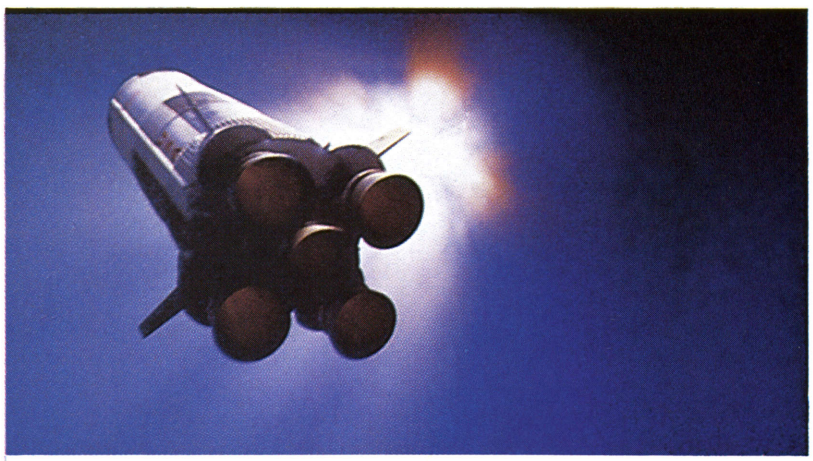
FILMS ABOUT THE SPACE PROGRAM appear about as regularly as quasars, so NASA fans are eagerly awaiting director Ron Howard's latest effort depicting the odyssey of the aptly numbered, ill-fated Apollo 13 moon mission, in which three astronauts barely escaped with their lives.

Howard was determined to bring the relentless authenticity that characterized his depiction of the fire department in *Backdraft* to his portrayal of America's space program. He began searching for an effects house that could re-create the stirring visuals seen in actual military footage of the launch and IMAX footage of outer space. But finding an outfit that would dare follow in the particle wake of effects landmarks like *2001: A Space Odyssey* and *The Right Stuff* was a tough nut, since *2001*'s primitive optical techniques (before the advent of motion control!) and *The Right Stuff*'s high-speed in-camera miniature effects yielded virtually unbeatable results. Howard eventually enlisted the newly-minted effects powerhouse Digital Domain, which had just garnered its first Grammy Award (for visual effects for the Rolling Stones "Love Is Strong" video) and Oscar nomination (for *True Lies*) in its first year of existence. But could the company that enhanced *Interview with the Vampire*'s gothic naturalism successfully tackle an outer-space epic?

Using traditional motion-control miniature work and pioneering new advances in computer graphics (CG) and digital compositing, *Apollo 13*'s visual effects supervisor, Rob Legato, along with digital effects supervisors Karen Goulekas, Mark Lasoff, and John McLaughlin, digital effects art director Kevin Mack, compositing supervisors Price Pethel and Mike Kanfer, and a team of about 40 digital artists, created out-of-this-world imagery that not only rivals the best work ever achieved, but can just about hold its own against IMAX photography of the real thing.

As Legato was finishing supervising effects for *Interview with the Vampire* (his feature film debut, having previously helmed visuals for TV's *Star Trek: The Next Generation*), he began conferring with Ron Howard about re-creating the Apollo 13 launch, which they agreed was the toughest effects challenge. Originally, Howard suggested capturing the washed-out look of the original military photography. Consequently, Legato planned a *Gump*-style blend of actors and miniatures with shots of an actual launch. But when they went looking for stock footage, Howard and Legato found that there was no consistent or complete set from the Apollo 13 launch, or even one similar to it. Instead, they encountered multiple formats and frame rates. But the issue was moot once Legato realized that Dean Cundey's live-action footage didn't have a period documentary feel. "I was afraid if we just took the *Gump*-style approach, the launch would look underwhelming, like we cheaped out, stuck in some stock shots and nothing more," he recalls. "That approach wouldn't have the majesty Ron was looking for, so we finally decided to build our effects from the ground up and forget stock shots."

About a month and a half before filming began, and before any of the miniatures were even built, Legato went on a loca-



This page: ***The ullage thrusters of the Apollo 13 model were created digitally and rephotographed off the computer monitor to create a glow. The stars were created digitally, and the miniature ship was shot with motion control. The shake at moment of impact was also added into the composite.***

tion scout with Howard to Cape Canaveral, Florida. He was immediately struck by the enormous scale of everything connected with the space program, and was determined to apply this awesome dimension to his effects shots.

Unfortunately, Digital Domain hadn't bid to create any large-scale landscape miniatures, and there were other problems with the location that Legato and Howard hadn't counted on. "Because this is a period film, a lot of things didn't exist quite the same way as they had back then," Legato explains. "The Space Shuttle gantry is now in the way of the launchpad; we can't get around that, so how do we fix it?" Legato knew he could easily enhance a locked-off shot of the launchpad using CG and miniatures, but he wanted to fill the launch sequence with moving, dynamic shots.

Legato decided to try a much more ambitious application of a technique he pioneered for *Interview with the Vampire*, where he scanned a series of overlapping stills of a miniature of Pompeii into his computer, like location photographs, then blended the seams in Photoshop. Afterwards, he created an artificial pan across the miniature and combined that with a motion-control pan to Brad Pitt in a boat, which in turn linked to another motion-control move of Pitt in a hotel room. Legato dubbed the process Pan-and-Tile, because scrolling back and forth across the composite computer image looked identical to a cinematic pan. The process would have its most profound impact to date combining miniatures with real locations for *Apollo 13*.

Using a Panaflex camera, Legato shot locked-off plates on rolling motion picture film of every conceivable angle at the Cape Canaveral location. "This is the next extension of the Pan-and-Tile technique of *Vampire*," Legato says. "I was able to shoot every plate in the movie in two days with a live-action camera and no motion control."

One of the plates forced Legato to push his Pan-and-Tile technique beyond its limits: an incredible shot that follows fuel from a tank beside the launchpad and along the massive fuel-delivery pipes lining the flame-trench walls below the gantry. The shot ends by tilting up to reveal the Saturn V as it fuels up. In reality, there was no Saturn V atop the launchpad, just the Space Shuttle gantry; the first had to be added, the latter removed.

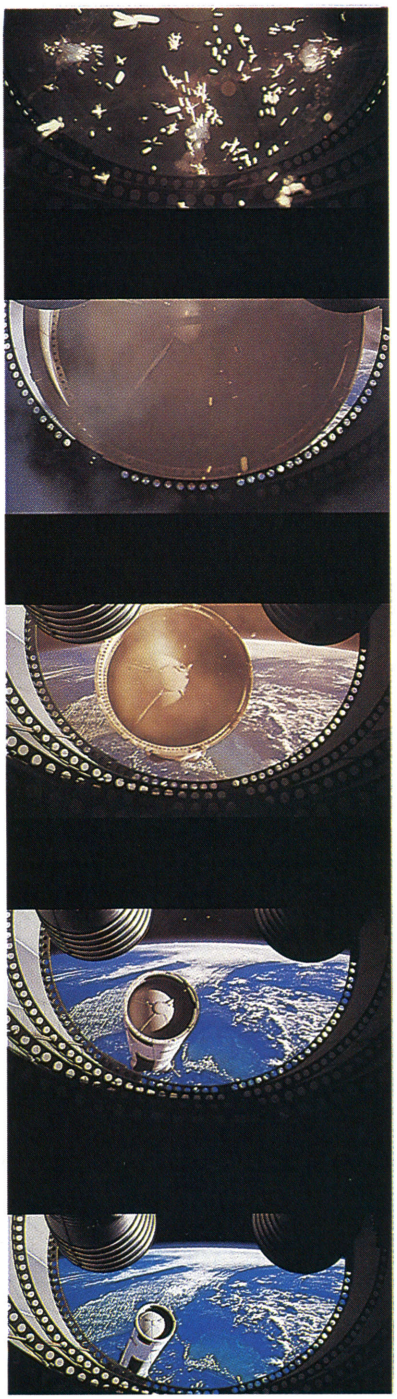
Using a Panaflex motion picture camera for pin-registration and consistency, Legato actually tilted up along the location as he was shooting his individual tiles. That way, all the distortion and perspective changes that would naturally occur during such a move were in the still photography. "I started at one end of the flame-trench pipe, rolled ten seconds of film, tilted down, rolled another ten seconds, panned over and overlapped the last shot, shot for ten seconds," he recalls. "Then, somewhere near the middle of the move, I started tilting up, and just covered the entire area with overlapping tiles."

Back at Digital Domain, that tilt-up shot and other background plates were made period-perfect via Pan-and-Tile 3-D texture mapping. "Because we used a series of stills to create our plates, we could actually art-direct the background in the computer, get rid of that gantry and put in a new sky as if the shot wasn't moving. Kevin Mack and digital matte artist Martha Snow Mack painted out all the antennas and things we didn't want and painted in sky, landscape, launchpad, or whatever was needed."

Meanwhile, a team of modelmakers headed by Pat McClung and Leslie Ecker built an entire NASA space fleet in miniature. The largest of the ships were a ¼-scale Command Module and Lunar Module (LEM). As for the Saturn V itself, McClung and Ecker used everything from a 1/100 scale, four-foot-tall store-bought model kit of the Saturn V rocket for long shots to various ⅛-scale oversized miniatures for insert shots in the complex launch sequence.

Legato started shooting McClung and Ecker's models as soon as they were finished. Most of the launch sequence cuts featured their 1/20-scale, 18-foot Saturn V rocket and 20-foot gantry miniatures, which were shot on their sides so the motion-control camera moves could be matched by the CG camera on Legato's plates.

This shot was created to look as if it was taken from the camera mount on the out-of-control vehicle. The thrusters were created digitally and tracked to fit the model. The gas and mylar released in the explosion were also created digitally.



The background of this shot of the first stage of the rocket separating after launch is a digital painting based on a NASA Earth photo. The photo was digitally mapped onto a sphere and bump-mapped to create an illusion of 3-D. The foreground models were shot in motion control. Foreground spark and gas elements were shot separately, and the intermediate gas elements were created digitally.

As if that weren't a tall enough order, Legato was striving to create a realistic look that blended seamlessly with the Cape Canaveral location: "The easiest way I know to make models look real goes against everything anybody in this industry does: do less, just shoot it naturally, don't screw with it. Erik Nash and I underlit rather than overlit the rocket miniatures using a single source light and key-to-fill ratio of actual sunlight, then shot them as a medium exposure. Models look more real that way than if I use dental mirrors and other cutesy tricks to highlight them. Our philosophy is if a live-action cameraman wouldn't shoot it that way, don't do it for a model.

"I wasn't directly matching any of my effects into Dean's photography," Legato continues, "but I wanted to capture the overall tone. I used the same #1 or ¼ ProMist frost filters he used outside on all my exterior model shots. If that rocket really existed, Dean couldn't have lit it, so he'd have to shoot it at the same ratio I picked. I made up a lighting ratio identical to that on the launchpad, and I was strict about treating the model exactly like that onstage. I didn't overly fill it in or try to control the contrast; I just went with it."

Once his model shots entered the computer realm, Legato had to be vigilant in fighting the temptation to improve them: "There's a tendency when we get into digital to 'help' shots by bringing up the shadows or that type of stuff because we can. But since we couldn't do that in reality, I insisted we go with the contrast ratio built into the lighting."

Digital technology helped tremendously in putting together a heroic shot of the Saturn V under construction in NASA's massive Vehicle Assembly Building. The God's-eye-view shot, taken from a helicopter, travelled from behind the building to the 400-foot-high front door, which was open, revealing the rocket as its top stage was lifted into place. Unfortunately, NASA refused to open the door, but even if they had, there wouldn't have been a Saturn V inside. First, Digital Domain's 3-D CG artists Judith Crow and Laura DiBiagio recreated the Vehicle Assembly Building in their computer as a wireframe model based on actual measurements of the structure. Next, by tracking that wireframe to the motion of the building in the shot, they derived the camera move, and then used that data to drive their motion-control camera around a miniature of the building's interior. But the shaky helicopter move, combined with human error in deriving the wireframe, meant that the resulting composite required two weeks of fine tuning by CG artists Pablo Helman and John McLaughlin.

While assembling his effects elements, Legato became fascinated by the *Apollo 13* story arc, and wanted his shots to reflect the film's moods as it followed the Apollo 13 astronauts from their Cape Canaveral launch through their journey and all its perils — the oxygen explosion that transformed their trip into a nightmare, the breathless re-entry, and the splashdown. Legato took a unique approach, breaking the effects sequences into three acts and varying his style in each act to complement the dramatic needs of the film. "That way, there was a story to direct in terms of how the ships moved from act to act," Legato explains. "The first act was the majestic launch; the second was the ethereal trip to the moon, which I called 'the Lunar Ballet'; and the third section was the oxygen explosion, where all hell broke loose and the camera became this rolling frenetic thing inside the capsule and out. It might be all in my head and not up on the screen, but it gave me a point of departure. And it made my job fun."

More than majesty or absolute realism, Legato wanted to create excitement during the launch sequence. Howard hit on the idea of using Scorsese-style staccato cuts and lots of coverage to send both the astronauts and audiences into orbit. By combining 1/20-scale motion-control miniatures of the Saturn V and gantry and high-speed photography of ⅛-scale practical insert sections, Legato hoped to impart to his launch the explosive energy

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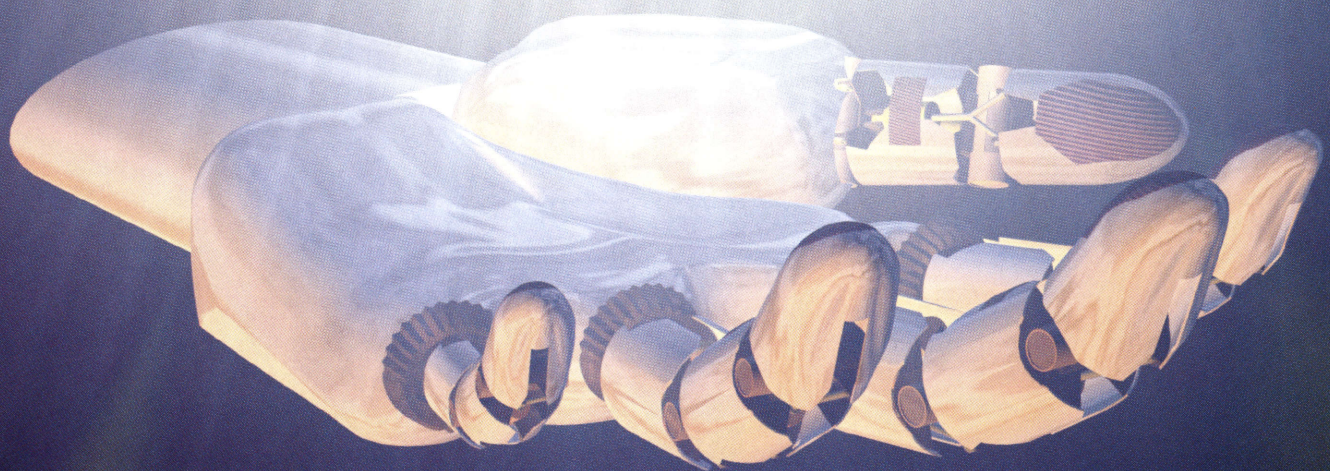

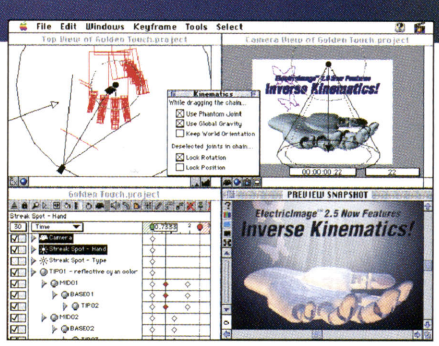

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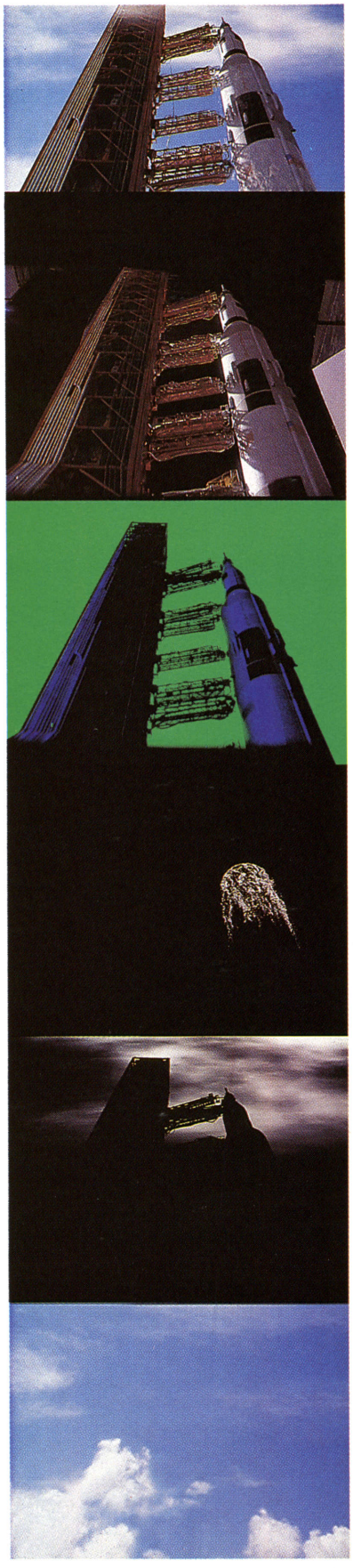
The background of this launch shot was created with helicopter still shots and digital matte paintings of Cape Canaveral, texture-mapped in 3-D space. The move was derived from motion-control information from the miniature shoot on stage.

of the billiards breaks in *The Color of Money*. "Scorsese used four-frame double cuts each time a pool cue hit a ball," Legato observes. "The cue clearly hit the ball, then in the next cut, Scorsese backed up the action so the cue hit the ball again, but when it was cut together it just looked like — bam! — one move. I thought that was really cool, and that's how we made the launch more explosive than it was in reality. We shot close-ups of engines firing from three angles, which were cut so tightly that you won't perceive it as repetitive action."

Ultimately, about 25 of *Apollo 13*'s 125 effects shots were devoted to the launch itself. Many of those shots involved compositing the Saturn V model into Legato's Pan-and-Tile background plates. As it turned out, that technique, which Legato had turned to out of expedience and desperation, paid unexpected dividends: Pan-and-Tiling enabled him to compose his effects shots much more organically. Rather than predicting the camera move he would need later on location, then force-fitting a miniature he had yet to shoot into that background plate later, Legato was able to create both moves simultaneously at Digital Domain. That part of the process was aided immeasurably by some remarkable software created by Bill Spitzak. "Bill wrote a really slick program that mapped all these stills onto the inside of a sphere so they actually bent and warped as we panned across them, which absolutely re-created the exact pan and tilt the plate would have had if we shot the move on location," Legato says proudly. "Then, when we shot our 1/20-scale rocket and gantry miniatures on-stage, that simulated motion-control file drove this software so the camera panned and tilted exactly like it did when I shot the Pan-and-Tile move in Cape Canaveral."

In the case of nearly every shot in the launch sequence, the Saturn V and gantry elements



were combined with CG gas, ice, fire and 3-D environments created with location plates and digital matte paintings to create layer upon layer of realistic detail in the final composite. Because of the huge workload, they decided on taking a unique, uniform approach to compositing both stage effects, i.e. models, and 3-D CG effects, including thruster fire, gas and ice, into their shots. "We decided to treat 3-D objects just like stage elements," Pethel insists. "Rendering and compositing all objects within frame in the same environment is the traditional way, but then if we wanted to change one element, we'd have to composite the entire darn thing again. Instead, our strategy was to make our CG elements separately, then composite them with our stage elements."

The completed launch sequence — the preceding description only scratches the surface — is evocative of the original NASA photography, but Digital Domain injected an ineffable majesty and power, capturing the space program's romance without being schmaltzy. "I think we've improved on the original, in a way," Kanfer says proudly. "The most challenging aspect of this film was to recreate something real, as if Hollywood was there at the actual launch. We used every trick to create photo-realism in the compositing. Our rockets were shot against black, then composited into blue sky backgrounds — usually either entirely fabricated or at least augmented — without black matte lines. Also, we shot the Saturn V with a ProMist filter, which gave us glints of sun off the white sides of the rocket. Once we added all the CG ice, vapor, fire, and shake, these shots looked like you were really there. Ultimately every image had all the photographic artifacts of the real event: the glares burn out, there's grain on CG elements and motion blur. All of those elements were hard to do realistically in daylight, but mat-

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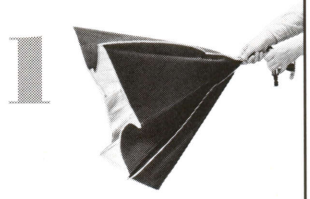

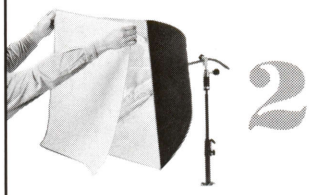

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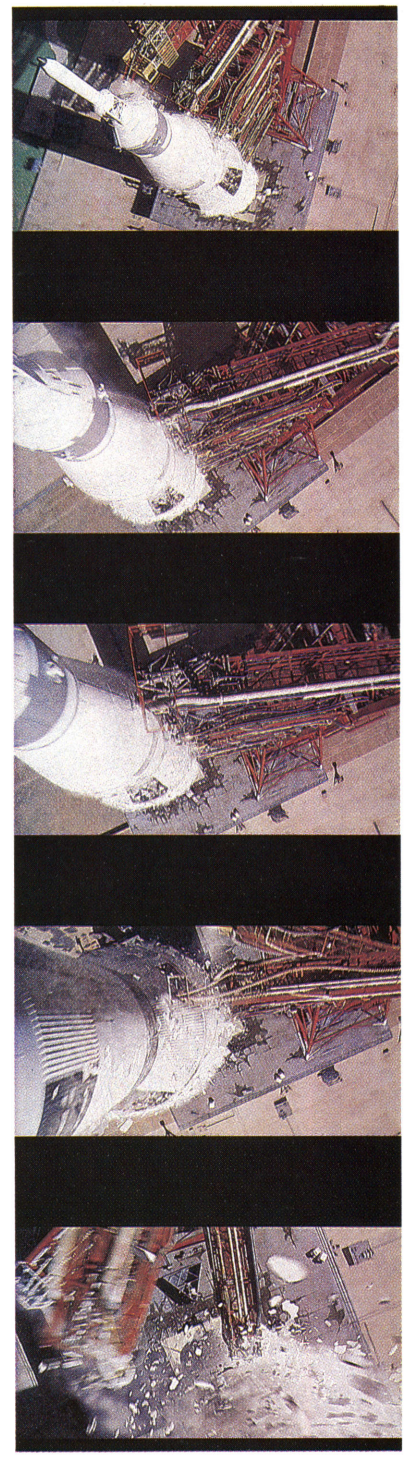

Another view of the launch. This sequence was shot in motion control, and the moves on individual arms were tracked. The gas, vapor, condensation and falling ice were all created digitally.

ting motion blurred objects in brightly lit backgrounds is our speciality."

After the Saturn V left Earth's atmosphere, you'd think it would be somewhat easier to composite the 1/20 scale rocket into the blackness of space, and you'd be right — once the Digital Domain team defined what space looked like. They were after far more than the modern equivalent of punching pinholes in velvet. "We wanted to capture the romantic quality and the pristine clarity of space," offers compositing supervisor Price Pethel. "Our technical advisor, astronaut Dave Scott, was very poetic about the feeling, color and majesty of space, and we were led by his vision."

Capturing that look accurately using digital technology required weeks of experimenting. John McLaughlin obtained a star position database from NASA, which he then converted and enhanced into a 3-D database. Judith Crow and Dan Janowski then implemented an automated star request system that generated 3-D stars based on motion-control data from the stage. Mark Lasoff and Mike Kanfer ran several tests with Deluxe, the same lab that was going to do the actual release prints. "Every astronaut will tell you that the darkest black you can imagine is in outer space, and then there's the contrasting brightness of the stars. So we went for the darkest black possible without crushing the shadow detail on our miniatures. Generating the stars digitally required very sensitive adjustments so they didn't look too big or disappear altogether. To reach that threshold of blackness and create point light sources coming from just a couple of pixels was like walking the edge of a razor."

Pethel and Kanfer next had to deal with the difficult contrast issues thrust upon them by Rob Legato's unusual approach to lighting his miniatures. Legato took advantage of a huge dynamic range to accurately portray the contrasting hotness and blackness of objects in space: highlights were usually two stops overexposed while low-

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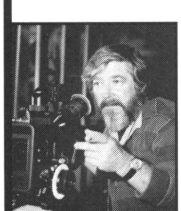

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lights were three stops underexposed.

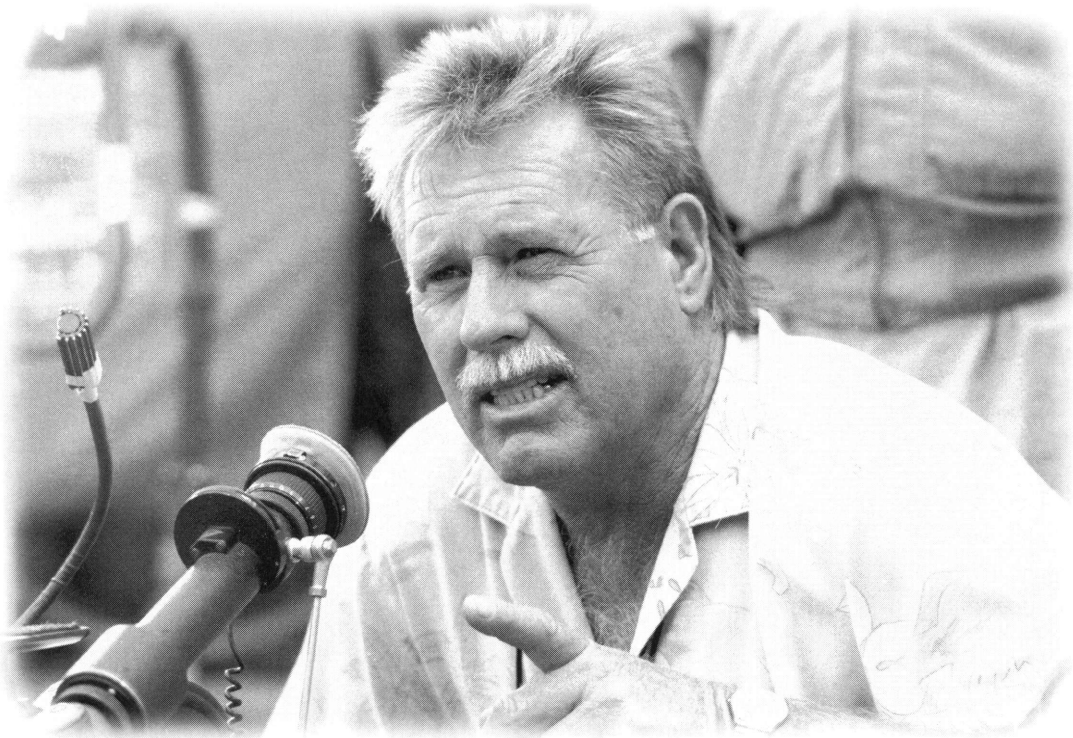
While Legato felt constrained by gravity on Earth during the launch sequence, he devised the second of his three effects acts to take advantage of the weightless environment of space. There, where the notion of up and down is virtually nonexistent, he added a roll to almost every shot of the Lunar Ballet. "Since every shot was composed for wide screen, the Saturn V rocket became what amounted to a pencil shooting through the middle of this black horizontal frame. That made it difficult to get really nice compositions, until we started taking advantage of that liability by adding roll to those shots to find the optimum composition. I first got the idea from the weightless tests Ron did early on for the movie. If the actors went sideways, Dean Cundey actually rolled his camera to follow their movements, which looked correct in this weightless environment. So I thought I'd try that, and it added a lot of life."

Another exquisite shot shows the separation of the first stage of the rocket as photographed from inside the Saturn V's second-stage cylinder. "The idea was to replicate that famous shot which was taken by a 16mm camera NASA put in the capsule ring," Legato says. "The camera, which was jettisoned along with the stage and the whole ring connection, had a little parachute attached and that's how that film got to Earth! Although the filmmakers would have been satisfied with re-creating the original shot exactly, they encouraged us to find a way to take the curse off of simply remaking the stock shot. So as the stage fell away, I added a little pullback to reveal the interior of the ring and the Earth below, which I hoped would make the shot absolutely awe-inspiring."

The concept was brilliant, but the process to make the shot look just the way we remember it — but clearer and more majestic — was painful. After the rocket and gantry miniatures were shot onstage by visual effects director of photography Erik Nash, the shot went through about a dozen workstations, where additional elements were made. Dennis Blakey and Robert Small created the CG ice and condensation gas, Martha Snow Mack painted reflected clouds in pooled water on the concrete floor and interactive light elements, and David Isyomin created particle water. The shot was then composited by Adam Stark into a seamless eruption of fire, water and steam. The last thing added was a digital camera shake created by Simon O'Connor and Mark Lasoff, which provided the final bit of realism to the shot.

An explosion of another kind was waiting to rock the Apollo 13 capsule. The disaster in space, where the compressed oxygen tanks ruptured in the service module, behind the Command Module, was achieved using a full-sized "miniature." "We built a 1:1 section of the capsule for the shot where the rivets popped and the gas blew out through the gash," Legato says. "It needed to be that big so we didn't have to worry about scaling the gas. We built a hydraulic ram inside to push up against the physical mass of the capsule skin. Once again we used fire extinguishers, this time to simulate the oxygen that shot into space when the skin ruptured." Andrew DeGenova created and animated computer-generated rivets popping out of their holes at the moment of explosion.

As the service module broke apart, several panels blew off and thousands of bits of mylar insulation, the service module lining, blew out. "The gag was to see this explosion happen," Pethel says. "It wasn't a fiery explosion so much as a fast out-gassing of oxygen that tore the side of the ship open as all the mylar particles spun out into space.



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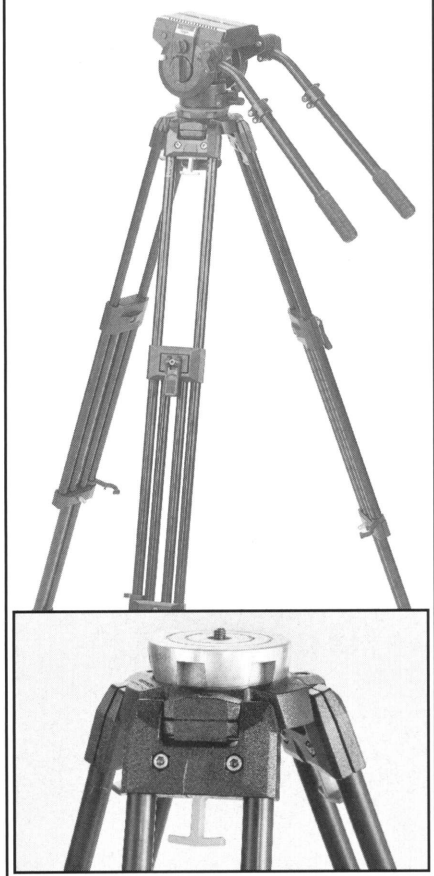

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Unlike an explosion in our atmosphere, explosions in space are isotropic, so in this case the mylar particles and gas formed a shroud that travelled around the moon with the ship as the astronauts turned all the thruster rockets on to try to steer it back. Everything was CG except for the model itself: Neville Spiteri used particle systems to create the gas and mylar particles, and Mark Forker composited the scene."

The final and most violent of Legato's three-act effects structure largely centered on the Apollo 13 Command Capsule and Lunar Module (LEM). This extended sequence employed very large, ¼-scale miniatures constructed of wood covered with a thin skin of metal sheeting for accuracy.

That's where the compositing problems began. Although it's common in motion-control miniature photography to shoot several different passes — for matting, for beauty and so on — the Command and Lunar Modules required special treatment. When they were photographed backlit against green screen, their metallic surfaces reflected green spill, which could have wrought havoc with the model shots. To counter the green-screen bleed, Digital Domain's model shop used the traditional technique of applying clear lacquer phosphor paint to their models, then shot an additional blacklight glow pass on them. But Legato and company took advantage of that now-humdrum technique to get some rather spectacular results. "The blacklight glows helped us create very specific spill patterns from the green-screen reflections behind the models," Legato recalls. "They served as travelling garbage mattes for the green spill on the models; then we could flop and print the Earth or the moon into them, which created very natural moving reflections in the ships."

But their reflective troubles were hardly over. "We could see our fill cards reflected in all the LEM's metallic surfaces," Legato laments, "but decided to let that go because the reflections got lost in all those different facets. On the other hand, we could clearly see the fill cards in the reflective, mirrored nose of the Command Module, so we were screwed! We shot separate fill passes with a black shroud over the reflective material. Then we'd backwind the film in camera, remove the shroud and shoot keylight only on top of that. That way, the nose appears to only reflect the sunlight the way it would be if it were really in space, without reflecting the fill cards that illuminated the rest of the ship. That was a lot of work."

If the reflectivity of the models' surfaces created compositing problems, moving the massive things on Digital Domain's motion-control stage began assuming absurd dimensions, particularly when the ¼-scale Command Module and LEM were linked. Suddenly, like the space program itself, Digital Domain saw the size and scale of their equipment escalate exponentially, beginning with the model mover. "Although big models are nice to look at, they're difficult to shoot," Legato opines. "When the LEM and capsule were attached, the model measured 14 feet, and our ordinary model mover just wasn't big enough to support that weight and torque when the ships revolved. Our model department built a larger rig from scratch, which broke a couple times because it was so massive."

Another large scale capsule model with its own self-heating shield was the star performer in the terrifying re-entry sequence, where the astronauts jerry-rigged a heat shield and prayed they wouldn't burn up in the Earth's atmosphere. "I wanted our re-entry to be a little more realistic-looking than the one in *The Right Stuff*," Legato says. "That was very cool for the time, but where they shot liquid nitrogen and shook the camera a

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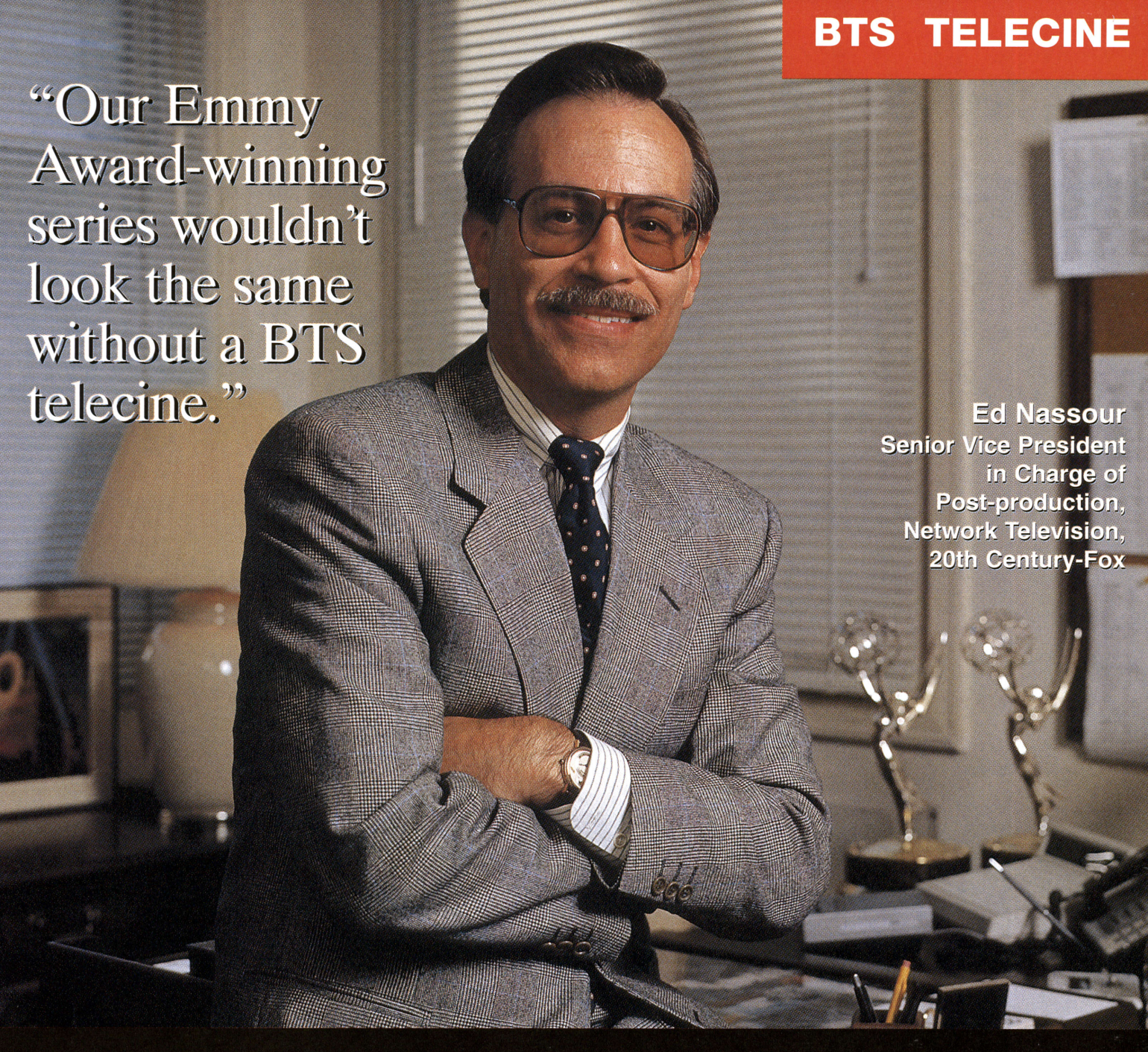

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lot, I wanted to shoot real fire. There's a method of undercranking the camera while shooting fire so it still feels like fire but it looks like something else. I kept undercranking my shots further and further to about four seconds per frame, and suddenly the flame had a kind of ion-storm look, which is what we used to create the feeling that the capsule is heating up."

"The capsule model, which was covered with dirt and burn-streaks, was shot motion-control, forcing gas out its base," Price Pethel adds. "Pyro whiz Joe Viskocil created a wonderful fire element that travelled around the capsule base. Then he blew the flames with a fan so the gas wrapped around the edge of the shield and engulfed the whole model in flame, so the capsule really looked like it was burning up as it was re-entering. Then we added glow passes to make the model look like it was heating up and glowing cherry red." CG vapor and pyro trails were additionally created by Caleb Howard and Dennis Blakey with particle simulation to complete the effect.

Added to the mix were some puffs from a fire extinguisher — properly scaled, of course. "That's the whole joke of this show," Legato laughs. "NASA had three rockets firing in a 400-foot Saturn V and all this force and power, but to really get that image on film you'd have to build a billion dollar rocket! Instead, we tried to re-create that billion dollar launch using fire extinguishers and overcranking and shooting very specific angles. Every once in awhile, when we started feeling pretty good about what we were doing, we'd look at the real stuff and just shake our heads!"

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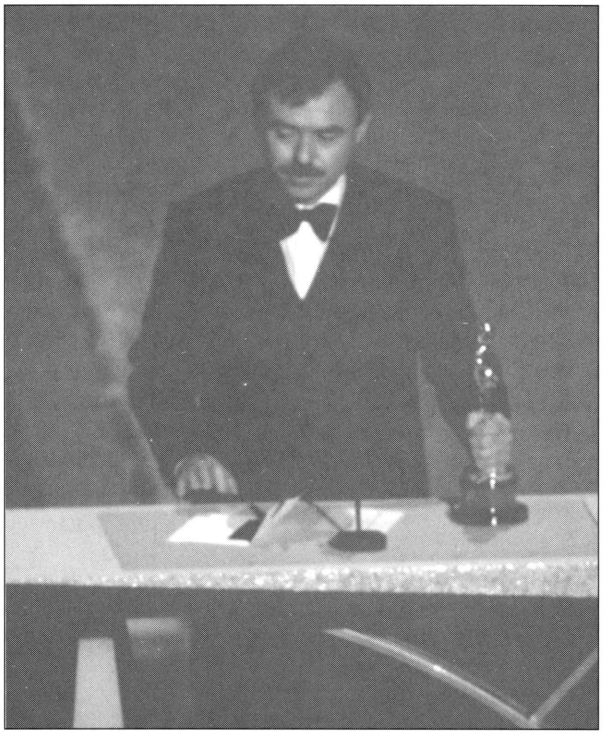
Cinematographers are beginning to wonder if they're jinxed by the TV gods. Last year's Academy Awards ceremony omitted Conrad Hall, ASC from the list of nominees. "Accidents will happen" was the response from the generally charitable community of camerapersons, who understand that the real purpose of the annual lovefest is to sell movie tickets. This year, however, insult was added to injury when only one nominated cinematographer's name made it to the ears of the attendent billions. Imagine the uproar that would have ensued if a presenter had forgotten to mention the name of one of our "national treasures" — PR code for movie actresses.



Oscar winner John Toll.

John Toll, ASC, who won for *Legends of the Fall*, made a valiant effort to make up for the gaffe during his time at the podium by naming and thanking his co-nominees: Don Burgess, for *Forrest Gump*; Roger Deakins, ASC, BSC, for *The Shawshank Redemption*; Owen Roizman, ASC, for *Wyatt Earp*; and Piotr Sobocinski for *Red*.

Hopefully, the Academy will avoid a third strike by paying special attention to the category at next year's ceremony.

The ASC's list of nominees was nearly identical to the Academy's. Roger Deakins took top honors for *Shawshank*, and he was joined at the ceremony by Toll, Roizman, Burgess and Conrad Hall, who was nominated for his stylish work on *Love Affair*.

In years past, *AC* has run short stories on each of the Academy and ASC nominees. This time around, we've decided to focus on the films and cinematographers who haven't already been covered in feature articles. Toll, Burgess and Roizman (and their nominated works) were each the subject of cover stories in previous issues of this magazine (March '95, October '94 and June '94, respectively), and Hall, who last year received the ASC's Lifetime Achievement Award and the ASC Award for his work on *Searching for Bobby Fischer*, was saluted in a lavish spread in our February '94 issue. Therefore, we have departed from tradition and will devote the following space to the remaining pair of cinematographers and their works: Roger Deakins (*Shawshank*) and Piotr Sobocinski (*Red*).

Roger Deakins, ASC, BSC
The Shawshank Redemption

by Chris Probst

An inspirational story about the endurance of the human spirit and a renewed sense of hope, set in a prison, wouldn't exactly come to mind when one thinks about the work of horror novelist Stephen King. But when director Frank Darabont read the novella "Rita Hayworth and the Shawshank Redemption," which appeared in the King collection *Different Seasons*, he knew that the intimate tale of friendship was perfect for the big screen.

Adapting the screenplay himself, Darabont teamed up with producer Niki Marvin. Together, the duo assembled a cast of some of Hollywood's most respected actors, enlisted the expertise of Academy Award-winning production designer Terence Marsh, and locked down a collaboration with expert director of photography Roger Deakins.

The Shawshank Redemption depicts the life of Andy Dufresne (Tim Robbins) after his incarceration into the Shawshank State Prison for the alleged murder of his unfaithful wife and her lover. Inside the prison, Dufresne, an introverted banker, meets fellow convict "Red" (Morgan Free-

man), a cynical veteran of life inside the walls. The two men soon embark upon a lifelong friendship that dramatically changes their views of life.

"What I found compelling about this story was the underlying message about the human spirit," says Darabont, who says that Deakins' sense of narrative was a key to the film's success. "What's great about Roger is that he tends to think like a storyteller. He's not just a guy who lights and shoots. [Roger viewed] the film from the storyteller's standpoint and tried to create a visual journey that would match the journey that the story took."

Critical to this approach was the photographic rendering of the prison. Laden with morose colors and foreboding shades of gray, the film's look immediately sets the tone for Dufresne's feeling of despair and isolation. "The whole approach," says Deakins, "was a sort of cool, gray light and cool, gray exteriors."

Photos by Michael Weinstein, courtesy of Castle Rock Entertainment

Darabont agrees. "Certainly in a film like this, the look of it is dictated in some measure by the location that you've chosen. Obviously, if you're shooting in a prison, you're going to go for a lot of grays and browns. You're going to reinforce that as much as possible. However, there was a great collaboration between Terry [Marsh] and Roger — doing paint tests! When the new prisoners are marched in and the warden (Bob Gunton) comes out and gives his welcome speech, [you can see the results]. The paint for the wall behind him was painstakingly chosen for color because Roger wanted a very specific look. He wanted to light that in such a way that it almost dropped off into black, but not quite. They went through I don't know how many paint chips finding the right shade of gray that was going to kick enough to give the effect that Roger wanted."

For the filming of *The Shawshank Redemption*, the production conducted a nationwide search for a facility that would serve the visual needs of the story, which takes place between 1947 and 1967 in a Maine prison. The filmmakers eventually chose the Ohio State Reformatory, a gothic, century-old prison located in the town of Mansfield. Scheduled to be demolished after being deemed inhumane, the facility had been dormant for almost four years.

Deakins admits, "We wanted to feel the prison, the harshness of the environment, and that's why they chose that particular prison, which was a very archetypal, nasty place. But I was still trying to be naturalistic to a degree. I'm really pleased with the fact that I don't think things stand out; if something stands out, then it's wrong. In films now, people are seduced by images, but those images are not necessarily right for a story. Something can be ugly and still be interesting."

Deakins photographed the film primarily on Eastman Kodak 5293 rated at 200 ASA (except for some day exteriors shot on Eastman's 100 ASA 5248). He shot the film under daylight-balanced sources, but didn't correct the color temperature to the stock's 3200-degree rating. "I shot the whole thing without correction filters," admits Deakins. "[This strategy] gives you a slightly enhanced contrast, and the shadows always remain cool, even if you print it back; if you time it in the lab to correct for the lack of the 85 filter, it never comes back the same. But we deliberately didn't print it back all the way. We wanted that sort of grey,

Above: ***Andy (Tim Robbins) and Red (Morgan Freeman) discuss the game of life over a checkerboard.***
Left: ***Shawshank director Frank Darabont (right) and cinematographer Roger Deakins.***

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cool look."

The prison interiors ranged from an entire four-story cell block set to individual 7' X 9' cells. Deakins employed a style of lighting he describes as "heightened naturalism." He explains, "Basically, everything is lit with a lot of light that's soft but directional. I didn't use a tremendous amount of fill. Rather than shooting wide open, I lit to about T2.8 or T3.5 — a reasonable stop to get decent sharpness and clarity.

"The guys always have a joke with me," he adds, "because my meter seems to stick on T2.8. Actually, I don't meter a lot. Recently, my meter broke down while I was doing the Coen brothers' upcoming film *Fargo*. I didn't realize it until the end of the day, and I thought, 'Oh my God, my meter broke down!' I was really worried about the dailies, but it was stupid. Everything was fine — it was T2.8 anyway!"

Deakins' first assistant, Eric Swanek, confirms, "He tends to be from a T2.5 to T3.2, which is a perfect place to be. You have enough depth that you can play with it a little bit, but not [so little] that you have to worry about which eye is in focus. It makes it interesting for the assistant too, much more than a T4 or T5.6. You have to pay attention."

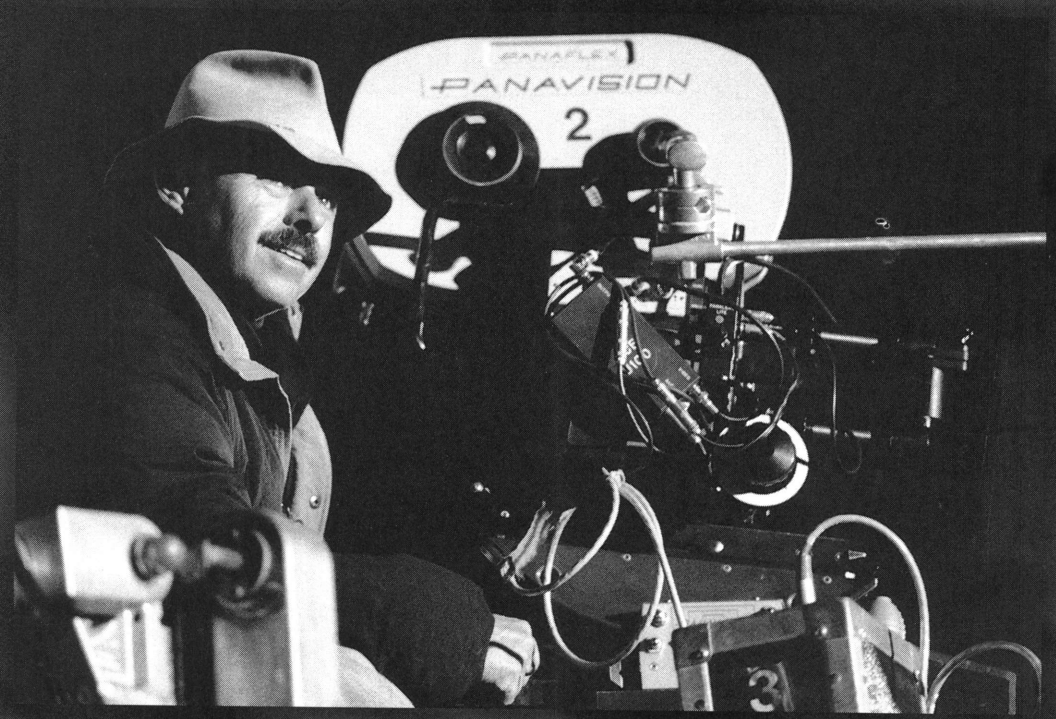
The main cellblock set, designed by Terence Marsh, basically functioned as a practical location. Built in a warehouse a mile from the prison, the set housed more than 200 separate cells on four floors, each with air-pressure-driven doors. Practical fixtures were worked into the design to facilitate the lighting. "A lot of people thought that main cellblock was an actual location shot with almost available light," says Deakins' longtime gaffer, Bill O'Leary. "Other cinematographers have said that and we were very surprised."

"The whole set was built to within 10 feet of the actual walls of the warehouse," recalls Deakins. "There were a lot of discussions about how to create enough space [to shoot] and how big we needed to make the skylights so that we could get the right kind of light through. Additionally, we discussed the practical lights and the color of the walls so that they wouldn't be too bright or too dark. I had more than 25 Maxi-brutes [fixtures consisting of nine PAR 64 lamps] above the skylights through slightly staggered layers of diffusion. When you looked up, you were actually looking right into the lights. That's basically how I lit the place. The only problem with it was the overhangs of the walkways. With the top-light, it was too shadowed to read the cell doors, so I had blondes with 1/2 CTB coming in from the walkways just out of frame to fill it in. If there was a practical on, then it was dimmed so that it would go to around 2800 degrees Kelvin."

The employment of practical fixtures into the constructed cellblock set required considerable effort and planning by Marsh and O'Leary. Recalls O'Leary, "Every cell — and I believe there were 120 of them that we were prepared to look into, which was the whole half of the set closest to Tim's cell — had boosted-up practicals on dimmers. We had gutted everything that was there, run Teflon wire in and put larger bulbs — 200-watt and 250-watt bulbs — inside the actual fixtures. Then we ran another system into every single cell: a feed behind the existing fixture, so that we could add small gag lights behind all of the practicals to boost our levels if necessary. Generally, we'd use 1000-watt FCM quartz bulbs which were also placed on dimmers and were separated from the actual bulb inside the fixture. We could dim down the actual glass fixture bulb and look at it with the lens, but behind it we'd have the 1K FCM to actually light that part of the cell, walkway or stairway.

"For the day scenes," he adds, "we lit with the Maxi-brutes through the skylights. We

Congratulations



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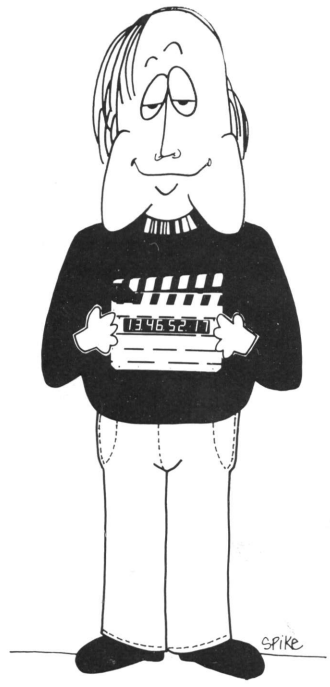

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had more than 25 Maxis above, and 120 Mighties outside the main cells ready for when we looked in. And for the hero cells, we had a couple Mighties coming through those windows. Outside the large arch-windows at the opposite end of the block in the background we had several Maxis and a 'Wendy' light — which contains 198 PAR 36 bulbs broken down into four panels of 49 bulbs each — coming through those windows."

For the tungsten units used outside the large windows and the skylights, Deakins used ½ CTB correction, which was in stark contrast to the dimmed quartz units in the practical fixtures on the set. "With the dimmed tungsten on the interiors," says Deakins, "we wanted a kind of nasty oppressive yellow light. Then later on that yellow light becomes richer and nicer and the prison itself becomes slightly less cold.

"We always had full correction between the coolest and warmest lights," he adds. "If you're shooting a daylight scene and the practicals are on, I hate it when you cut to a night scene and the practical is suddenly very different from what it was in the day scene."

Another substantial set in the film is the mess hall, which was a redressed location inside the Ohio Reformatory building. "We had 12K HMIs outside most of those windows," Deakins recalls. "We shot them straight at the windows and diffused them with a couple layers of 250 [Lee Half-White] diffusion which were staggered away from the windows.

"There were about 50 12K HMIs burning for that set. A large part of the lamps were in the wings that receded away from you, but there was also quite a bit of light just because of the size of the windows and the space in the actual eating area. For that whole setup we did a very large scaffolding rig down the whole side of the prison and used an industrial forklift to lift the lamps up — the tops of those windows were a good 25 to 30 feet."

"What's great about Roger is that he tends to think like a storyteller. He's not just a guy who lights and shoots. [Roger viewed] the film from the storyteller's standpoint and tried to create a visual journey that would match the journey that the story took."

— Director Frank Darabont

Deakins, who operates on his films, is actively involved in designing the compositions, blocking and movement of the camera. "Roger was diligent about composing shots to always remind you where you were," says Darabont. "If we were out in the yard shooting dialogue, he was always trying to tweak the angle just so that it would reveal some intriguing architectural detail looming above the characters. He was cognizant about not letting too much sky in at the top of the frame to give you a background that was mostly wall — which we had talked about doing in prep and he was good about maintaining as we were going along."

For *The Shawshank Redemption*, Deakins rarely used a zoom lens. "I don't think people think about lens lengths enough," he admits. "That's why I really like shooting on prime lenses. It makes you think, 'Why do I want to be close to somebody on a wide lens as opposed to being a long way away on a long

lens?' Many people say, 'Well, it's the same size shot,' but it's not the same effect. You're telling the audience a totally different thing. I think that's really important."

Deakins prefers to be in focal lengths close to that of the human eye's natural field of view, which he feels lend a more naturalistic feel to the images. "The wider group shots we shot on a 32mm or 28mm," he says, "and on close-ups we'd shoot on a 40mm or sometimes a 50mm. Rarely would I go past an 85mm lens. In that range I think you get a sort of presence."

"We used an Arri BL-4S for A-camera with an Arri head," recalls Swanek, "and a MovieCam Compact for B-camera/Steadicam [Gerrit Dangremond]. We also extensively used the Giraffe crane, owned by Roger's dolly grip Bruce Hamme, with a Power-pod remote head and an Aero-crane. It was very versatile for doing any kind of crane shots in an enclosed space and basically overlapped the shortest height that the Giraffe could do."

One of the most memorable shots in the film occurs in the opening minutes, showing Dufresne's prison bus arriving at Shawshank for the first time. Captured with a Spacecam mounted on a helicopter piloted by Robert "Bobby Z" Zajonc, the sweeping aerial shot covered the entire facility and grounds, which were filled with inmates. The shot pans sideways as the camera looms down over a rooftop to reveal the bus turning into the entrance.

The exterior shots of Shawshank Prison were lit to match the feeling of the interiors. "In the quest to keep it looking natural," says O'Leary, "we don't do a lot of heavy lighting for exteriors. You'll notice that Deakins' day exteriors never look lit, and I believe that is actually one of the hardest things to do, to light and make it look un-lit. A lot of times the key to that is the blocking, getting people and the lens in the right spot. When we

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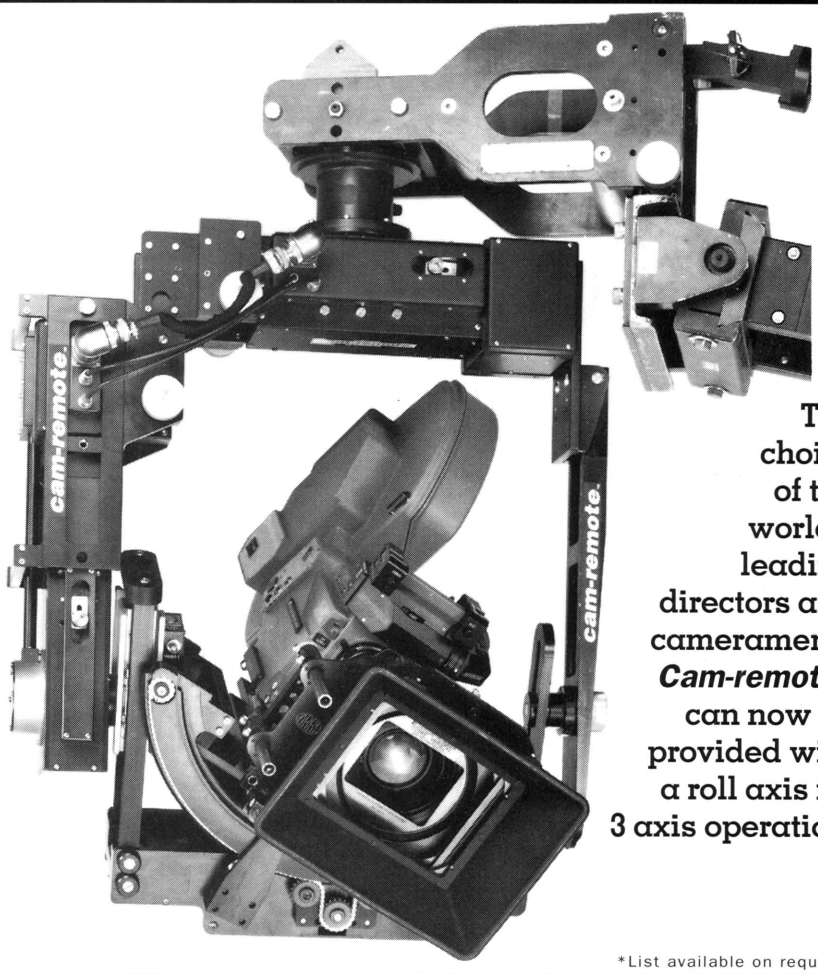

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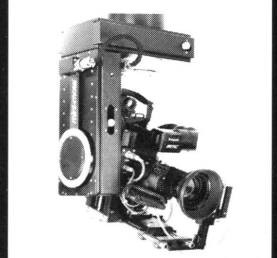

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Above: *In* Red, *Irene Jacob portrays a sensitive fashion model whose destiny takes a turn for the unexpected.* Right: *Cinematographer Piotr Sobocinski describes the film as "an elaborate game of associations."*

have a backlight situation, we might use an 8' X 8' or 12' X 12' silk or grid-cloth bounce as a fill, positioned to catch the available light, and then we'll have a lamp behind it coming through the silk or the diffusion frame just to boost what we're catching."

As *Shawshank*'s narrative twist unfolds, Deakins and Darabont wanted to visually cue a change in the mood. "Because of the direction the story went," Darabont explains, "we wanted to start off in tight, cramped spaces and end finally in an endless horizon. We wanted to go from grays and monochrome to this blazing color. It's interesting how color creeps into this story more and more as you go on and how the spaces start widening out."

"Roger is very astute on an emotional level as well as a technical level," says O'Leary. "That's the key to success. The whole idea of the technical part of it can be brushed aside once you're completely comfortable with that and move to the next level."

Deakins lit the climactic escape scene, in which Dufresne crawls to his freedom through 500 yards of sewage pipe, in a very practical manner. "The tunnel was lit with the flashlight," says Deakins. "When Tim first looks down the tunnel and puts the flashlight in, you're meant to see the distance down the tunnel. I got the scenic artist to paint a piece of card with concentric rings and put it in the background, because our tunnel was only about ten feet long. It was a trick I had done on *Barton Fink* when the camera went down into a plug hole in a sink."

"The tunnel was lit with a small 12-volt peanut bulb rigged into the flashlight that Tim was holding," explains O'Leary. "He was lit from the ambient bounce coming off the walls of the tunnel as he moved the flashlight around, and we also had a small white card around the lens as the camera snaked back on the Aero-crane."

"Recently I finally got to see the film and I was totally blown away," Swanek confesses. "I couldn't stop talking about it. Everything about the film, every little move, told something. The camera work never distracted. It was always telling the story without distracting you from the heart of the story, which was the relationship between these two guys. It never over-emphasized, it never under-emphasized. It reinforced the story without becoming apparent."

That about sums up Deakins' philosophy about cinematography. "Everything hangs together and does relate to the story," he adds. "Nothing stands out and disrupts the story. It's not about the damn photography, it's about the audience getting seduced into the story and these characters."

Piotr Sobocinski
Red

by Stephen Pizzello

In addressing its themes of free will, destiny and salvation, *Red* achieves a rare balance of subtlety and grandeur. A dazzling cinematic achievement in every sense, the film is purportedly director Krzysztof Kieslowski's last. The Polish master has claimed that he will now retire after giving world cinema

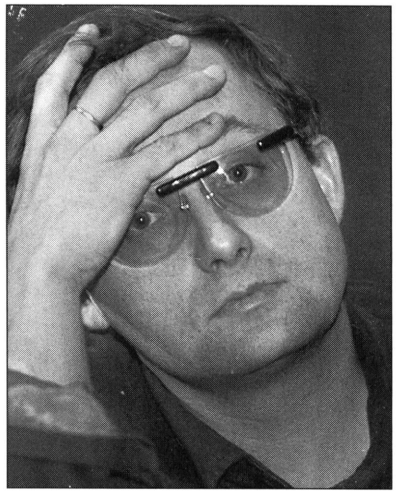

Photo by Douglas Kirkland

such gifts as *The Decalogue* (a 10-part televised interpretation of the Bible's Ten Commandments that has been widely praised by critics), *The Double Life of Veronique*, *Camera Buff*, and the recent *Blue* and *White*, which represent the first two installments of a troika concluded by *Red*.

Red's sumptuous, frequently stunning visuals have called a great deal of attention to the film's director of photography, Piotr Sobocinski, the son of

renowned cinematographer Witold Sobocinski (*Frantic*) and a graduate of Poland's famed Lodz Film School. The younger Sobocinski first collaborated with Kieslowski on two episodes of *The Decalogue*. Kieslowski had originally intended to use a different cinematographer for each installment, but wound up needing to ask one to serve double duty. The choice was clear. "Krzysztof had originally called to ask me to shoot the third installment, and we didn't have much time to talk about it beforehand," Sobocinski recalled in an interview conducted one day after attending his first Academy Awards ceremony. "We almost met for the first time on the set, and it was a great moment; without words, we found the same frequency in our temperaments. We got to trust each other so much that we didn't have to speak very often during the filming. After finishing eight of the films, he had run out of cinematographers, so he asked me to do the ninth episode as well."

The duo's synchronicity is readily apparent in *Red*, a project they began discussing two years prior to its physical realization. The film tells the story of an accidental meeting between a sensitive fashion model (Irene Jacob) and an embittered, misanthropic ex-judge (Jean-Louis Trintignant). As the two get to know each other, they influence each other's lives in ways that neither could have foreseen. "Krzysztof came to me and told me he had an idea for a film that would be impossible to do," Sobocinski related. "I said, 'O.K., let's try it.' We had many meetings over the next two years to discuss the project. We talked about how to create an experience that would give the spectator the chance to interpret the events portrayed on the screen. The film's subject was very untouchable and ephemeral; we wanted to say something about accidents and destiny, and we needed to use the tension be-

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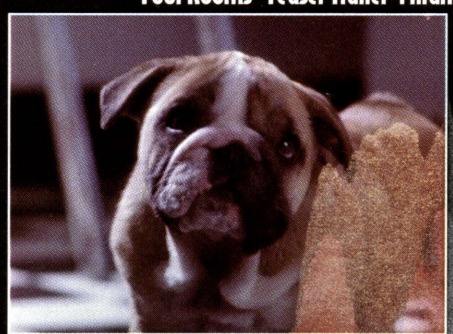

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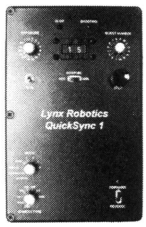

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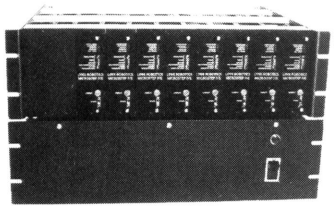

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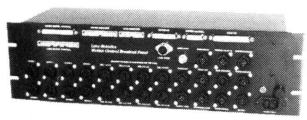

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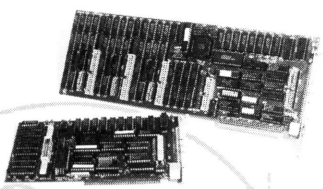

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tween the dialogue and the visuals to find the equivalent of action, because this film had no real action in it. In many scenes, we included certain elements that meant nothing at first, but would have significance later on. If the spectator notices these things, it creates a sense of action, because he is looking for everything that will happen. We were trying to simulate the sensation of flipping through the pages of a book, where you can go back to previous pages and reference things that have happened earlier in the story."

"Krzysztof came to me and told me he had an idea for a film that would be impossible to do," Sobocinski related. "I said, 'O.K., let's try it.'"

Five months before principal photography was scheduled to begin, Kieslowski gave Sobocinski a copy of the script. The cinematographer took the initiative and began pre-visualizing his approach. "What's most important for me is the vision I have in my head the first time I read a script," he related. "I close my eyes, and I see the film in my imagination. After I get my first impressions, the next step is to catch the reality and make it as close as possible to what I have imagined. Usually, the finished film is a disappointment to me because there is always a difference between imagination and reality. While Krzysztof was still working on *Blue* and *White*, I went to Geneva and walked around to learn the city and to look for locations. Krzysztof joined me on the weekends. The first location we found was the judge's house, and my approach to that interior became the basis for the visual look of the film as a whole."

Sobocinski began feeling out that initial location by making tests with his camera, including a series of 360-degree pans that provided him with a better impression of the space. "The most important aspect of this film was that it should be believable. I didn't want it to be artificial, so I tried to find the mood of the original interiors. I was thinking about the judge and the subject of judgment, and decided to use the color brown as a background. I chose brown for several reasons: because it blended with the color red, and because a deep brown would give me the chance to create deep shadows and point out important things with soft light.

"My overall approach involved eliminating a lot of colors, and keeping the backgrounds very simple," he noted. "In order to accomplish this, we exercised a great deal of control over every element that would appear in the background of the frame. We selected all of the cars, we took away all of the jeans from the extras, we painted all of the walls. These color associations all meant something important."

Using the Dutch painter Vermeer as a visual inspiration, Sobocinski tried to use natural light as his main source for the scenes within the judge's home. "If you shoot without lights, you don't see anything beyond the windows, because it's just blown out. But this atmosphere with the original light was believable. I used the same strategy we applied to the judge's house everywhere in the film — the same contrast, the same colors, and the same kind of lighting, mood and atmosphere."

Part of this approach meant that Sobocinski tried to mix light and shadows in nearly every scene, including exteriors. For interior shots, he let the natural light dictate the placement of the actors. "In the scenes inside the house, the judge is placed so that you can only see part of his

face; he is very closed-off. Valentine is in the light from the windows, because she is more open as a person." Sobocinski added that he enjoys building up a scene from complete darkness, which allows him to exploit the dark spaces in the frame. "The way I work is opposite from how a painter does; a painter starts with a white canvas. I especially like shooting at night, when everything is black and you can turn it into what you want. Because we were using deep browns in the interiors, I used a similar approach indoors. It was more difficult when we were outside in the light, so I used special screens hanging over the heads of the actors to eliminate the light. I then used light from the side to emulate the lighting I had used in the interiors. Sometimes it was impossible to do perfectly, but I always tried."

The filmmaker's most difficult narrative challenge was to find a way to visually convey the story's meditations on the nature of destiny. Thus began the complex game of filmic associations intended to engage viewers on an intellectual level. Constructed like an elaborate jigsaw puzzle, *Red* is rife with moments of *déjà vu*, scenes which serve as symbolic links to other sequences in the narrative. As the tale progresses, the audience begins to connect these threads into an elaborate, finely detailed cinematic tapestry.

This nonlinear approach was the result of a spur-of-the-moment inspiration. "We had shot the last scene of the film, the video 'news footage' of the ferryboat accident, several months before we began principal photography," Sobocinski revealed. "After we had finished it, I was watching it one day on tape and I happened to hit the pause button. There was a fireman with a red jacket crossing behind Irene Jacob, who was in profile. I said to myself, 'This is a key for the film.' It occurred to us that maybe the events in the film were not so

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accidental; maybe the judge had some control over the events. So we made the billboard poster in the film exactly like the stop-frame I had found on the tape. The whole film progressed in this backwards fashion. It was like a game of billiards: we already knew the final configuration of balls on the table, and we had to work out the patterns that would get them there. When you see the billboard poster recreated in the stop-frame at the end of the film, you have the impression that nothing happened accidentally."

To keep track of the many subtle associations they created, Kieslowski and Sobocinski created a reference list. In order to ensure that these key moments would not slip by viewers, they conjured up a variety of special camera moves and lighting techniques. One of the most impressive is a vertiginous ceiling-to-floor drop that occurs as the judge tells Valentine a story in an empty concert theater after her appearance in a fashion show. The move was executed by combining using a Technocrane. "You can make the remote arm of the Technocrane long or short, and the camera movement is in a straight line," Sobocinski notes. "We had to experiment to compensate for that, and it was a horribly difficult shot. We were doing it for about six hours. Jean-Louis and Irene were incredible, because they stayed in the same spot for hours to help us get this two- or three-second shot. The fact that we were watching it all on a tiny monitor made it even more difficult. The extreme movement of the shot wasn't just for the sake of a quick shot. It was to make an association with a previous shot, when August's book falls on the street. It's another of the elements in the game of associations resulting from the rhythm of the camera."

The Technocrane was combined with a Chapman dolly to achieve an early shot in which the camera floats over the streets of Geneva and into an apartment.

"We wanted to connect the outside world to our interior in a believable way, and we also wanted to establish the geography of the neighborhood," Sobocinski explained. "Valentine and the younger judge in the film live very close together, but they never see each other. This move helped to convey their proximity."

A Steadicam was used several times to great effect. The opening shot of the film, which simulates an electronic impulse careening through a telephone wire during a phone call, was created partly by shooting with a Steadicam at 3 fps. "We thought of doing that shot with computers, but the effect had no life that way," Sobocinski said.

Another ingenious shot follows a bowling ball as it rolls down an alley. To accomplish it, Sobocinski's crew built a spiderweb-shaped platform out of wood, and attached it to four bowling balls that were placed in the gutters on either side of the lane. A protective cover was placed over the camera lens, and the crew pulled Sobocinski and the camera down the lane. "We had to do many takes," Sobocinski said with a chuckle, "because Irene Jacob is not a champion bowler, and the ball kept rolling off the lane!"

Fans of fine lighting have much to chew on when discussing *Red*. The film's second fashion-show segment prompted spontaneous applause at one Los Angeles screening. As Irene Jacob sashays down the runway, stroboscopic flashes crackle over her body as the camera catches every elegant move. The sequence concludes with a breathtaking overhead view of the runway and the surrounding crowd. "We had 200 or 300 flashes, and we used an orange Wratten 85 to add a bit of color," Sobocinski recalled. "I used only the flashes and the stroboscopic lights for that scene, along with two or three lights to create general lighting. Fortunately, the ceiling was white to reflect the light. There are a lot of

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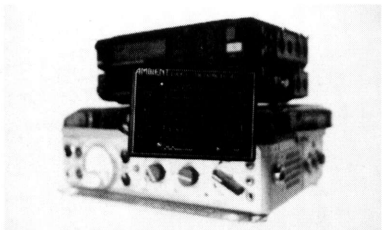

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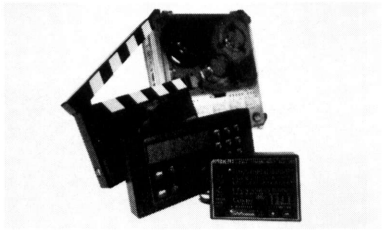

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deep shadows in the scene, which made it very difficult. I made a lot of tests with the Kodak 5296 stock — 5298 wasn't available at that time. I collaborated with the great lab Schwarzfilm in Switzerland to find the limits for that scene. I wanted it to look like a Dutch painting, so you could see people in the audience without recognizing them. We painted everything with a special matte black to help achieve that look."

Equally demanding was an intimate early-evening conversation between Valentine and the judge, staged in the latter's house. As their chat begins, Valentine is lit by a bright naked bulb; seconds later, she slips a lampshade over the bulb, creating a golden hue. "It was impossible to shoot the scene at magic hour, because we didn't have enough time; we had to shoot over the course of the day," Sobocinski said. "You see their profiles against the background of the dark windows. We put a special pane of gelatin on the windows to keep the balance the same for the whole day. It was horrible, because the weather outside was going back and forth from sunshine to clouds. I used a 250-watt high-intensity bulb so it would absolutely flash when Jean-Louis turned it on. I did a test beforehand to find the limit where we could still see Irene Jacob's pupils. Then she places the shade over the bulb to create a yellow that we later see in a shot of the younger judge as the camera runs into the window of his apartment. This was all part of the game of associations.

"Later in the same scene, a stone is thrown through one of the windows, and I had to remove the gelatin to make it possible. We had to do that just at magic hour, and we waited for the exact moment. I had to remove the 85 filter from the camera. We didn't manage to finish the first day, so we had to wake up early the next day and wait again for exactly the right moment. We were still a bit off, and it wound up being a bit too bright outside, but we didn't have time to do it again. That scene really made use of the whole characteristic curve!"

Particularly observant viewers will notice several scenes that play against the normal laws of lighting. In one, the judge is lit from the right side when the window should be casting light from the left. In another, a window that is completely blown out in one shot is exposed normally in the next. When asked about these apparent "mistakes," Sobocinski smiled slyly. "I wanted to do something different in a few shots, but not all spectators will notice it. There are several moments like that, but they are very brief. We did it to break up the repetitious bolero, to indicate to the viewer, on a subconscious level, that something is a bit wrong."

Reflecting upon his collaboration with Kieslowski, Sobocinski praised the director's willingness to give his collaborators creative freedom. "We've made three films together, and in all that time I think he's looked through the camera maybe three or four times. He really gives me a lot of trust. On *Red*, after we discussed camera placements, I would set up the camera and the lights. Although I don't usually do it, I operated the camera myself because he asked me to. We didn't use any storyboards on this film. We had talked about the film a great deal before we started, and we made most of our decisions on the set. We did a lot of rehearsals with the actors and then set up the camera afterwards.

"It's incredible to work with Kieslowski, because his personality is so great and he has a vision for his films," Sobocinski concluded. "He can motivate people to follow his ideas without words. We didn't speak too much on the set, yet we had no problems at all. There was an organic atmosphere on the set, and it was really a lot of fun."

The Cinematographer's Master Workshop — Lake Arrowhead 1994

Experts offer valuable tips during hands-on seminars.

by Marty Ollstein

Last year, 11 select cinematographers gathered at the UCLA Conference Center at Lake Arrowhead, a woodsy California retreat, for the purpose of presenting a series of seminars coordinated by Eastman Kodak's Jamie Toscas and IFP/West's Shainee Gabel. The volunteer crew for the seminars consisted of Don Burghardt, first camera assistant; Scott Paperra, second AC; John Rodgers, gaffer; Bill Kennedy, key grip; Maria Haro, makeup and hair; and Denny Tedesco, UPM. They were assisted by several energetic volunteers from the IFP organization. Following is a written account of the presentations of three of the participating cinematographers: Toby Phillips, Laszlo Kovacs, ASC and Vilmos Zsigmond, ASC.

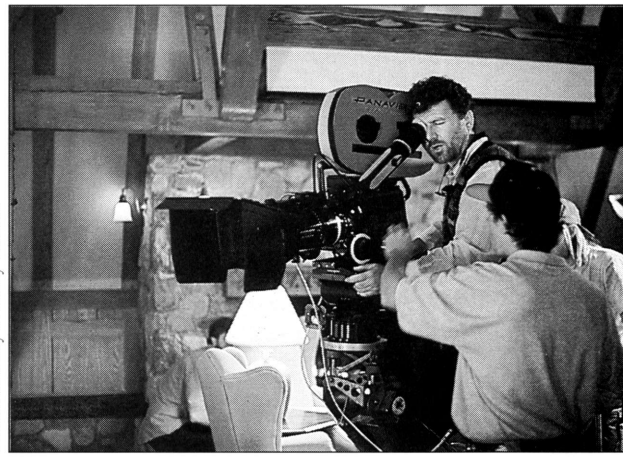
Toby Phillips began the seminar by introducing himself and his work. A transplanted Australian, Phillips is one of the busiest commercial and music video cinematographers, and is also in demand as a director and second unit cinematographer, as well as for aerial and underwater work. The commercial production company that represents him is on the cutting edge of the new digital technology, and Phillips is deeply involved in the development and application of these new techniques. He edits his own projects on a non-linear Avid Editing System.

Phillips brought a few music videos as examples of his work, one being a David Bowie project for which he shot seven different songs in one production day. Although they were all produced on a stage, each had a distinct look and used a variety of camera techniques.

One of Phillips's favorites was a piece in which Bowie is lit by a single powerful spotlight shot into a four-foot square of 1000H tracing paper, suspended only a few feet above and in front of Bowie. The lit paper floating above his head adds a curious element to the scene and gives the singer a soft enveloping light.

Another Bowie song was lit by several handheld lamps kept in constant motion by crew members wearing black. The moving highlights and ever-changing shadows on the blue background were fascinating.

A more abstract-styled piece was shot at 12 frames per second, then double-printed to maintain sync. Any movement tends to blur at that slow shutter speed (1/25 second), but the static elements of the frame remain sharp.



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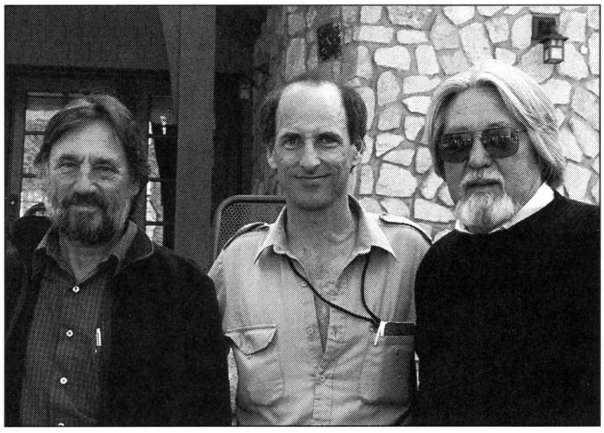

Above: ***Toby Phillips lines up a shot in the large hunting lodge at the Conference Center.*** **Left:** ***Author Marty Ollstein (center) confers with a pair of Hungarian greats: Vilmos Zsigmond (left) and Laszlo Kovacs.***

Monday

After breakfast, we divided into three four-person production teams. Each group was to create, light and shoot a scene that would provide for some experimentation and discovery.

The first group consisted of Lourdes Ambrose (from India), Odd Hynnekleiv (from Norway), Jeff Schaaf (L.A.), and myself. We decided on a day interior scene to explore the issues of mixed color temperatures, contrast control against bright windows and the use of practical lamps to motivate light sources.

The scene begins with a woman standing on a sunlit balcony, then follows her as she enters a large room and meets another woman in a shaft of light, motivated by a doorway but actually created by a 4K HMI. From there, they walk to another window where they pause, face to face in full silhouette against the bright window. The window was covered on the outside with two layers of 216 white diffusion gel, bringing the level of the window down to only two stops above the camera exposure setting.

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a-tête in silhouette, the women turn to the interior den across the room, tracked by a quick semicircular dolly move, and settle into easy chairs next to a fireplace. They seem to be lit by two practical lamps with warm shades. The light from the practicals was amplified by a couple of diffused 1Ks and a 2K Zip soft light.

We chose to shoot 5293, let the daylight go blue in the opening scenes, and boost the warmth of the fireside scene by gelling those lights with half-CTO. The result was a realistic mixture of cool, contrasty light by the windows and warm soft light by the fire. The film stock demonstrated its wide latitude by handling the range of color temperature and contrast very well.

Phillips gave input throughout the process and shared a number of his personal lighting tips, including a new way to use diffusion in lights. He cut up strips of white 216 diffusion, crumpled them into balls, and stuffed them into the compartments of an egg crate. This creates a diffused yet slightly uneven light — more interesting than the flatter light that results from a flat sheet of diffusion. Another tip was to crumple up sheets of newspaper in tight compressed logs and hide them under the burning logs just before rolling camera. This strategy produces a healthy dramatic flame for the duration of the shot.

The second group created a mystery scenario in which a man secretively poisons a pitcher of liquid before serving it to a woman sitting by the fireplace. As he tosses a log on the fire, she drinks the deadly potion and collapses under the practical light — conveniently allowing for a dramatic final image.

Using 5248, the team used many small lights, each of which performed an individual job. A 200-watt pepper, suspended on a C-stand directly over the pitcher where the actor sprinkled the deadly white powder in the drink, was encased in black wrap to focus its light on the pitcher, and gelled with half-CTO to give an amber cast to the drink.

Another tip from Phillips: when an actor is staged near a light with a color gel, the light falling on the actor's face may end up a different color temperature than the gel should theoretically deliver. This occurs because of the existence of unwanted reflected light — stray or ambient light from other sources is reflected by the color gel and falls on the face, giving an unwanted amplification to the color change. One way to avoid this problem, besides keeping actors away from the lights, is to place white diffusion between the color gel and the actor.

The third group created a low-key bar scene, turning a smaller meeting room into a murky piano bar. Shooting the same scene with both 5296 and 5298, they set up an effective comparison to judge the new Kodak high-speed film stock.

The shot follows a cocktail waitress from the piano in one corner of the bar through the maze of tiny tables in the foreground and up to the bar, where the focus moves to the bartender and a sultry customer. The low-key effect was achieved by using furniture clamps to suspend inkies and peppers from ceiling beams over each small table, and gelling the fixtures with CTO and half-white diffusion (250). A 4K Zip was aimed over the tables to give some ambient fill, and another 1K, gelled with ¼ blue, served as a backlight to the piano player.

The bar itself was lit with two sets of KinoFlo lamps — one hidden ungelled under the bar counter, giving the bartender a neutral glow, the other gelled magenta and laid beneath the stacks of glassware visible behind the bartender. The woman at the bar was keyed through diffusion and backlit with a magenta hair light.

The scene was photographed with and without the ambient fill light. Although some details were lost in the darker scene, it proved more dramatic. The version in 5298 had a sharper, more saturated look than the one shot in 96.

For the final setup, Phillips took over and created a dramatic scene that illustrated the power of bounced light, as well as the manipulation of colored light, camera movement and wind. The scene — a woman walking toward camera from a fire in the background to a foreground chair — was entirely backlit. Facing the camera from a balcony above, a 1200 par HMI shined down on the scene. Two 4K HMIs gelled with full blue sat on the floor at either corner of the frame, backlighting a chair on each side as well as the entire floor. A black curtain was hung behind the camera for negative fill.

Dressed entirely in black, her face painted white, the woman approaches the chair entirely in silhouette, sits down, and picks up a black card. A hidden fan behind the chair blows her long hair up in the air. The climax comes when she slowly opens the black card and dramatically lights up her face as the powerful backlight shining over her shoulders bounces off the white surface of the opened card. Her face becomes the brightest part of the scene. With only the bounced backlight, the lit face remains at full exposure as the camera dollies in to an extreme close-up, showing off the resolution of the stock. As the camera recedes, the face disappears as the woman slowly closes the card. The scene was photographed clear, and then again with a ProMist 1. The ProMist added an ethereal quality with the slight flare from the highlights and a softening of fine details. But some drama was lost in the desaturation of the blacks, causing a general lowering of contrast.

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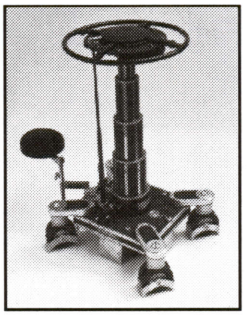

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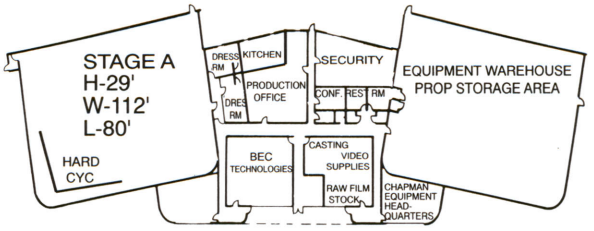

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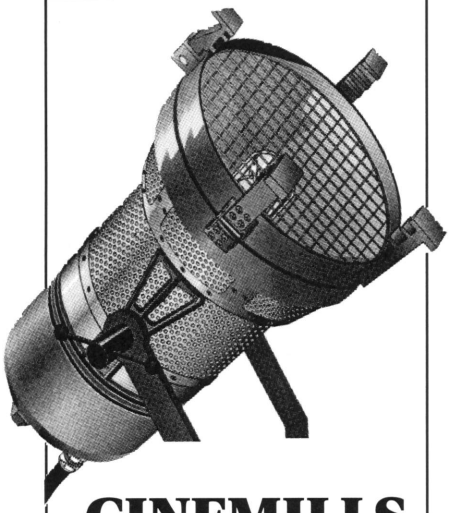

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That evening, representatives from Deluxe Laboratories made a presentation to the group. A co-sponsor of the event, Deluxe processed and printed the 35mm footage we shot during the week, which allowed us to evaluate and discuss the results with the masters. Ron Koch, Deluxe's vice-president of producer services, and Jim Hanralin, head of marketing and sales, stressed the importance of clear, specific communication in achieving good results through the lab. This begins with the labels on the cans, the camera reports, and the clarity of the slates preceding each shot. Each new lighting setup should be accompanied by a grey scale, lit with the exact color of light the cinematographer wishes to be white in that scene. If the scene is sunlit, the grey scale should be lit with the same color sunlight at the same time of day. If the scene is lit with tungsten light, gelled with CTO for a warm effect, the grey scale should be lit with ungelled tungsten light.

Deluxe will push or pull the negative processing on demand, and recommends careful testing before committing to special processing. To minimize the buildup of grain, they suggest rating a 500 ASA stock at 700 ASA when push-processing one stop to 1000 ASA. They will also flash the negative, but request testing to determine the desired percentage.

Some cinematographers requested specific printer lights; others let the lab timer find the level appropriate to the film. Normally, 5298 should fall in the mid-30s, 5245 in the mid-20s (in the printer light scale of 1-50 for each of the three printer lights).

The discussion then turned to projection standards, and how few commercial theaters maintain the ideal 16 footlamberts at 5400°K. Most are considerably darker and degrade the image.

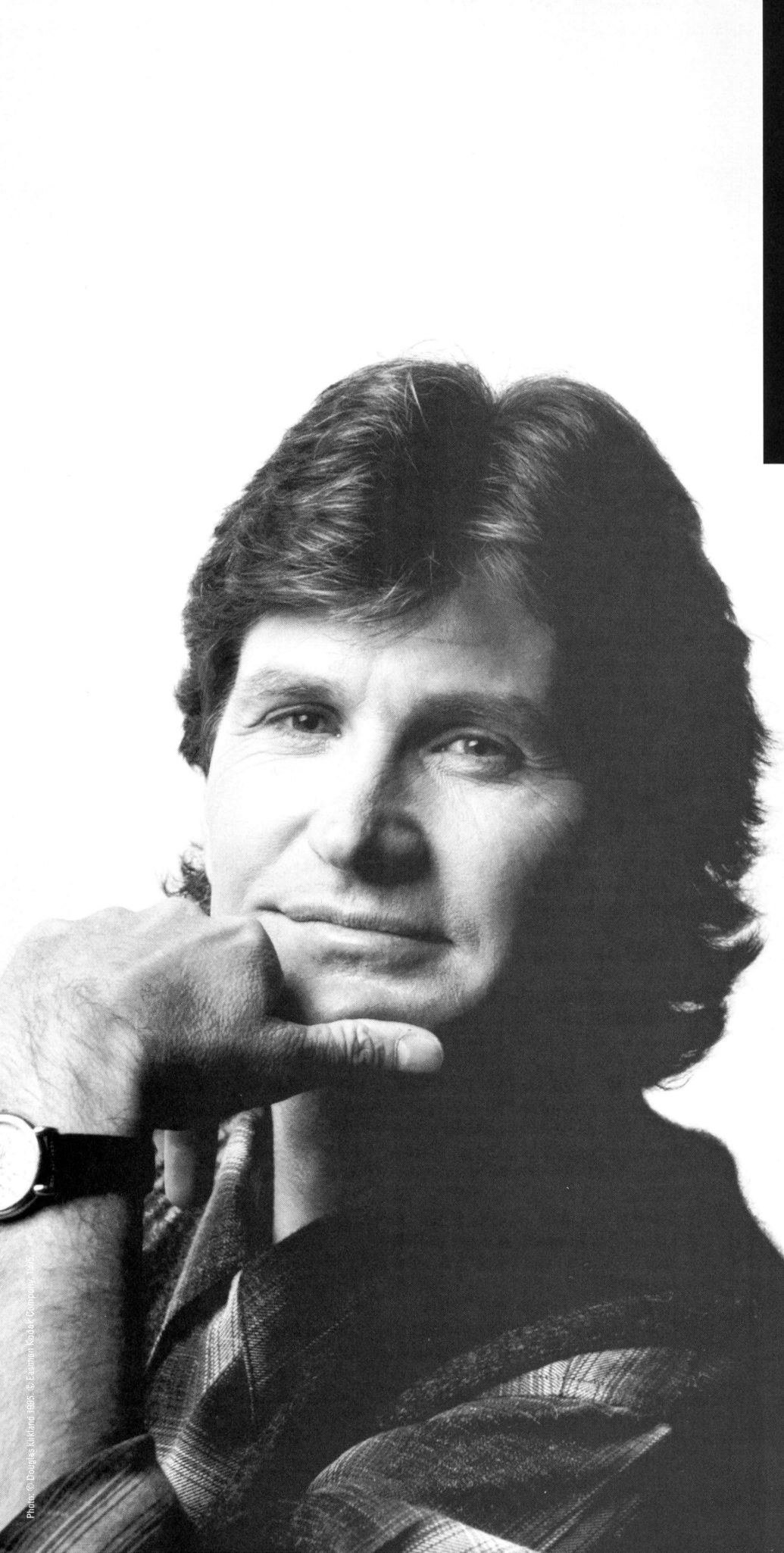
Tuesday

The morning session with Phillips was held out on the center's expansive sunlit lawn. He started the discussion by opening his case of instruments. The Global Positioning System, one of the newer tools available to the cinematographer, uses satellite communication to determine your exact position within 25 meters on the ground and your altitude within 300 feet. Phillips uses the system to scout shoots — particularly aerial shoots. If you are in motion, it will also give you your compass heading and speed. If you feed in a specific destination, it will give you a desired heading and travel time necessary at a given speed.

Phillips, who uses the Trimble Scout GPS unit, also discussed the Pocket Pal, which, among many functions, can be used to accurately predict the position of the sun at a particular time and day. This information can be critical to a production if a particular shot depends on the sun being visible (or blocked from view). Shadow location can also be predicted and measured using this data.

Phillips brought out the storyboards for a commercial he had recently shot, a car spot featuring a famous golf pro in several dramatic locations, including the Grand Canyon and Wall Street. Prints generated from the camera's video assist system were included in the storyboard, showing the precise framing of the shot.

Due to scheduling and budget considerations, neither the pro nor the car actually travelled to any of the real locations. The shots had to be composited from several elements — some shot on location, some on a bluescreen stage. Transparencies were made from the video assist image and used as a positioning matte. When a second shot needed to be composited with another, a transparency of the first shot would be laid over the video assist monitor (it fit exactly), and the final composited shot could be pre-visualized, precisely guiding the framing of the



DON BURGESS ON FILM

"Good films are made by directors who have a vision of what the story is about. You have to put that ahead of everything else. Bad things happen when everybody is making their own movie. I love the process of filmmaking. Every day you are solving new problems and making images come to life on the screen. I never put the photography first. That's not what it's about. It's about making the best film possible and being true to the story. I do a lot of preparation and testing and start every film with a concept. I keep it as simple as possible. That's what gives me the freedom to bend the rules at the moment of photography when something special is happening. You have got to adapt to the situation and know where the photography should take the audience emotionally. That's when your artistic instincts surface. It's still a thrill for me to see the print in dailies. That's when I know the magic worked."

Don Burgess

Don Burgess' feature credits include *Forrest Gump, Forget Paris, Richie Rich, Josh and Sam* and *Mo' Money.* He filmed *The Court Martial of Jackie Robinson* and *Breaking Point* for TV, many documentaries and commercials and second unit action footage for *Runaway Train, Backdraft, Batman Returns* and several others. His next feature is *Twister.*

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second shot. When plates are shot for video compositing, Phillips has them transferred on the Rank Steady-Gate system, a pin-registered system that produces a rock-steady image. Another means to steady an image is the "steady-system" tool on the Flame, which digitally locks down selected parts of the frame and compensates for any unwanted movement.

The pressure plate should be adjusted to accommodate the film stock being used, and checked with a thorough scratch test before photography commences. A depth gauge should be carried with a Panavision package and used to ensure the consistency of the flange depth.

To hone one's cinematographic skills, Phillips recommends practicing estimating light levels, then checking against a meter, as well as practicing estimating camera-to-subject distances for focus. When shooting 16mm, Phillips tries to stay with low-speed stocks for grain control and to shoot at 30 fps for a clearer transfer to video. His preference for ground-glass marking is the one that indicates the film- and TV-safe apertures, but that also shades the area outside of the principal film aperture (usually 1.85) to allow him to more easily concentrate on the important image area.

While watching dailies that afternoon, we discussed the choice of diffusion gels. Phillips' preferred repertoire includes opal, 216, and 1000H. He likes a pink backlight for brunettes, as he demonstrated in our bar scene. For blondes, he would use either orange or straw. He never puts diffusion too close to a light: the further the diffusion is from the lamp, the larger the light source becomes, and the greater the diffused effect. If placed directly next to the lamp, the diffusion won't diffuse — it will just act as a scrim. For the key on Maria, he used two frames of diffusion, one in front of the other. Other favorite diffusion setups include 1000H on a 4' X 8' frame in front of a 9-light, or bleached muslin under a Dino light.

Laszlo Kovacs, ASC

Admired for his impressive and varied work from *Easy Rider* to *Ghostbusters*, from *Five Easy Pieces* to *Paper Moon*, Kovacs is quite modest and unassuming. He chose to introduce his work by screening *Radio Flyer*; using the film as a model, he reminded attendees that lighting should be simple — identify the source and follow it in the scene. In daylight exteriors, Kovacs uses the sun as backlight whenever possible, even if it means cheating the subjects around during the day as the sun moves. The consistency of the source and shadow directions is more important than that of the background. Keep the faces backlit and filled to match the rest of scene, and the viewer will more likely accept changes in the background. Another alternative to cheating the subject is to silk it and create the back- and sidelight with reflectors and HMIs. The worst is overhead sunlight. For this reason, it is preferable to shoot in the winter, when the sun is lowest on the horizon.

Other points: lighting is painting, creating shadows. You are not obligated to light all subjects in a scene evenly. If several characters are in a scene, decide which are the most important, and influence the blocking to allow the source light to reach them. Once the featured characters are lit, the others should fall into place at the appropriate light level. The choice of the principal light source determines the look of the scene.

Wednesday

The location was to be a downstairs living room that offered an interesting mixture of window light and tungsten practicals. Using this mixture, the objective was to explore and compare two possible treatments of the situation — first, mixing the blue daylight with the warm

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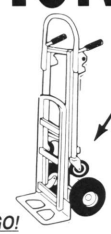

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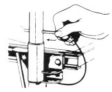

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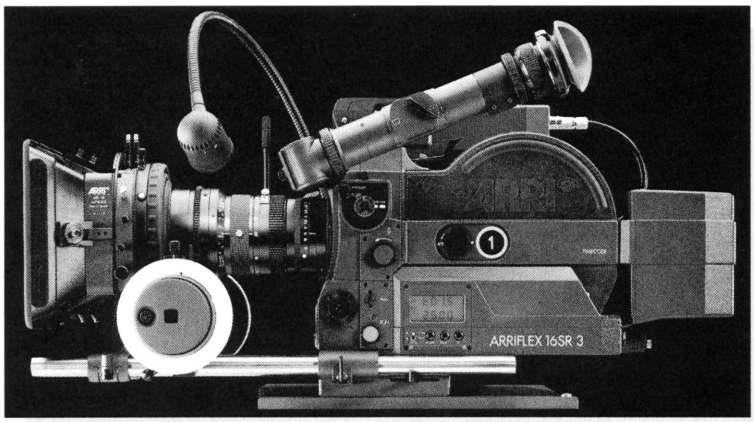

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tungsten practicals; and second, gelling the windows with CTO and staying with light of a single color temperature.

Kovacs made a number of admonishments. Each light should have only one function in order to have a clean result. When using nets within a shot to cut down the exposure on a portion of the frame, avoid letting the sun hit the net and create unwanted glare and reflection. Kovacs currently prefers not to use any diffusion on the lens. He keeps his color correction behind the lens, so that the front of the lens is as clean as possible.

The primary source of light for the scene was a 12K HMI coming through an off-screen window, imitating the effect of the sun. The bright exterior outside the windows was knocked down by a 20' X 20' double net on a frame. Interior ambience was boosted by two tungsten 5Ks, gelled with full blue to match the daylight. For the second setup, the windows were all gelled with CTO, and the blue gel was removed from the 5Ks. Kovacs posits that a ground glass without crosshairs makes for more interesting framing.

A second production scene was created in the big hall upstairs: a romantic candlelit table for two, nestled close to the fireplace. It was shot with 5296 and 5298 using several different diffusion filters (Soft F/X 2, Black ProMist 1, and Black ProMist ½ on the close-up).

Since the sources of light were established as the candle and the fire, most lights were gelled with ½ CTO. Ideally, the fill comes from the camera lens position and wraps around the subject. In this scene, Kovacs placed a large bead board above the camera and bounced an ungelled 1K light into the board. Two 2K lights, gelled with ½ CTO, were wired through a flicker box to imitate the flicker of a fire.

Suggestions were as follows: for the close-ups, cheat the

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candle to include it in the frame, or make a "dirty single" with an over-the-shoulder shot. Consider the candle a point light source and treat it as a hard light. Don't be afraid let actors move through dark areas in a scene. Allow truly black shadows, don't light every step, and follow the sources. Study light wherever you are: notice the source of the light and its effect on subjects. Lighting should be a simple recreation of nature. If there is no source that could provide adequate light for the scene, then invent an off-screen source and keep the lighting consistent with your decision.

Vilmos Zsigmond, ASC

Vilmos Zsigmond first achieved fame with *McCabe and Mrs. Miller* (a job passed to him by Kovacs), and went on to win an Academy Award for the cinematography of *Close Encounters of the Third Kind*. We began with a look at *McCabe and Mrs Miller*, for which director Robert Altman wanted the feeling of old photographic images. Altman felt that Hollywood movies were too colorful. He wanted pastels, muted colors. Zsigmond suggested flashing. After two weeks of testing at 5%, 10%, 15% and 20%, he decided that 15% flashing gave him the effect they were looking for.

Zsigmond operated the camera. When called for, he improvised camera moves, pans, zooms. He told us that the challenge of anamorphic is to use the entire frame, without interfering with the intimacy of the scene. Don't play the center, like they do in TV, he cautioned; play the sides.

The studio was worried about the flashed look of the rushes, thinking something was wrong. Altman and Zsigmond told them it was just bad printing, that the negative was perfect. (Of course, there was nothing wrong with the printing.) So they got away with it.

A fog filter was used to lower the contrast and soften the

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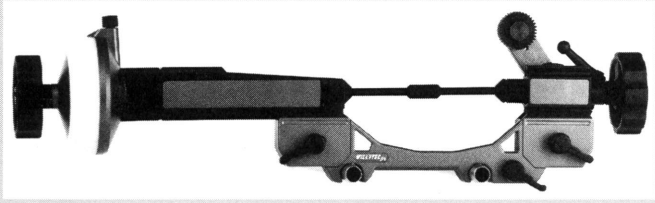

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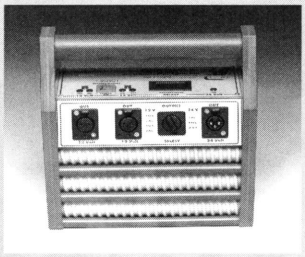

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image. They used 5254 — a tungsten-balanced film of 50 ASA. The flashing was done in the lab immediately before processing. If too much time elapsed between the fogging and processing, the effect of the flashing could vary.

The resulting negative was quite thin, giving a murky, soft image. Altman loved it. But Zsigmond began to worry. He started to sneak in more exposure, resulting in a fatter negative (with more contrast and resolution). But Altman noticed right away and confronted him with it, so Zsigmond went back to the borderline underexposure that made this film famous. There was a section near the end in which it made sense to lend more contrast and resolution, with deeper blacks — and it gave Zsigmond a chance to demonstrate that he could expose "correctly" if he chose to. The lesson: shoot the story.

Zsigmond related a story about a custom sliding Soft F/X filter that he ordered from Tiffen for *Intersection*. As a shot moves from a wide landscape to a tight close-up, the requirements for diffusion change. The wide shot with minute detail calls for a minimum of diffusion to preserve the information, while the close-up of the face may call for substantial diffusion to smooth unwanted detail. The sliding filter allows the cinematographer to change the diffusion effect from 0 (clear) to Soft F/X #2 (a moderate diffusion). It consists of two overlapping long sheets of glass, each gradually attenuated from clear to Soft F/X #2. As the needs of the shot change, the "filter operator" moves the gears that move the glass planes horizontally to achieve the desired level of diffusion at the appropriate time. The technique is not new, but the application flies or fails based on how it is used.

Thursday

For the production period with Zsigmond, it was decided to work on day and day-

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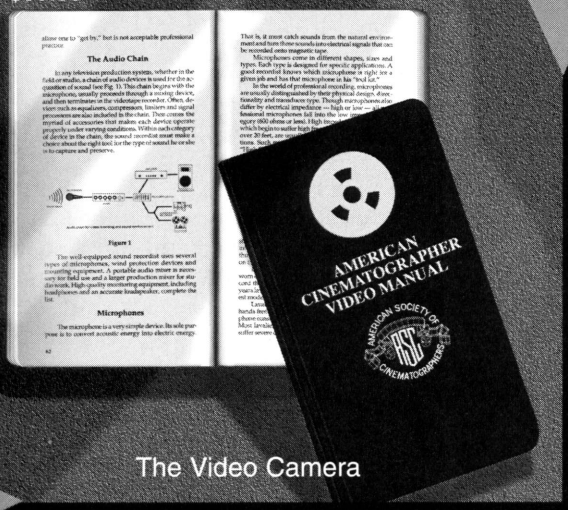

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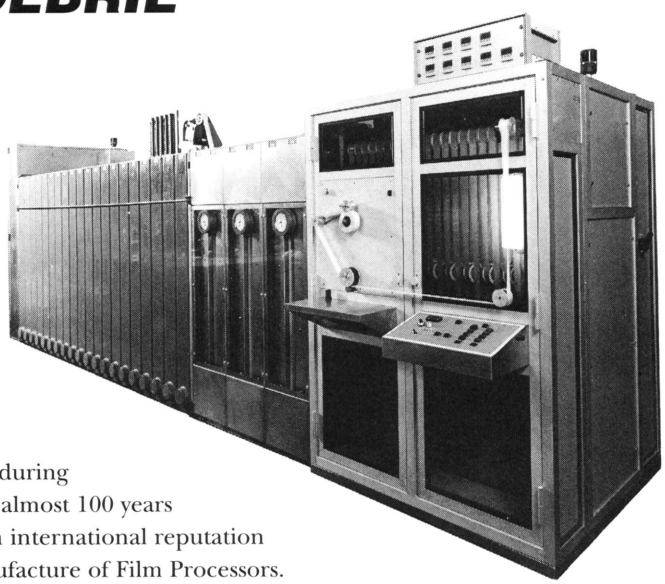

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for-night exteriors near Lake Arrowhead.

In *Maverick*, director Richard Donner usually preferred tight shots. Zsigmond wanted wider, more open shots. Instead of arguing about where to place the camera, Zsigmond set up another camera and shot a looser shot alongside the tight one. Although it may be more interesting to light at an angle and create shadows on a subject, it is often necessary to use a flatter, softer style to make actors' faces beautiful. This may include a flat front light, the absence of shadows, a strong backlight, and diffusion on the lens.

The exterior scene begins following a woman walking along the lake shore, backlit by the bright afternoon sun. She then turns up the hill and joins a black woman seated in the foreground next to a tree. We photographed the scene several different ways, each time adding a new element to the mix. The first take was naked and contrasty, showing the full brightness range of the scene. Next, we brought in a reflector to fill the faces in the shadows. This gave more detail, but resulted in a rather harsh, contrasty feel. In the next take, an HMI light was brought in to fill the actors from a position next to the camera. This gave a softer, more glamorous look to the scene — less realistic, but more beautiful.

Day-for-night involves shooting a scene during the day using the ambient daylight, but making it look like night. Experimentation demonstrated that the effect works best when the scene is cross backlit, with the scene underexposed two stops. In addition, the effect is further improved by making the sky dark with a grad filter, giving the scene a bluish "moonlight" cast, cutting glare with a pola, and using a diffusion filter on the lens.

Zsigmond's tidbits, expanded from notes: the trick of realistic lighting is not to look "lit." A softer, cooler look is more

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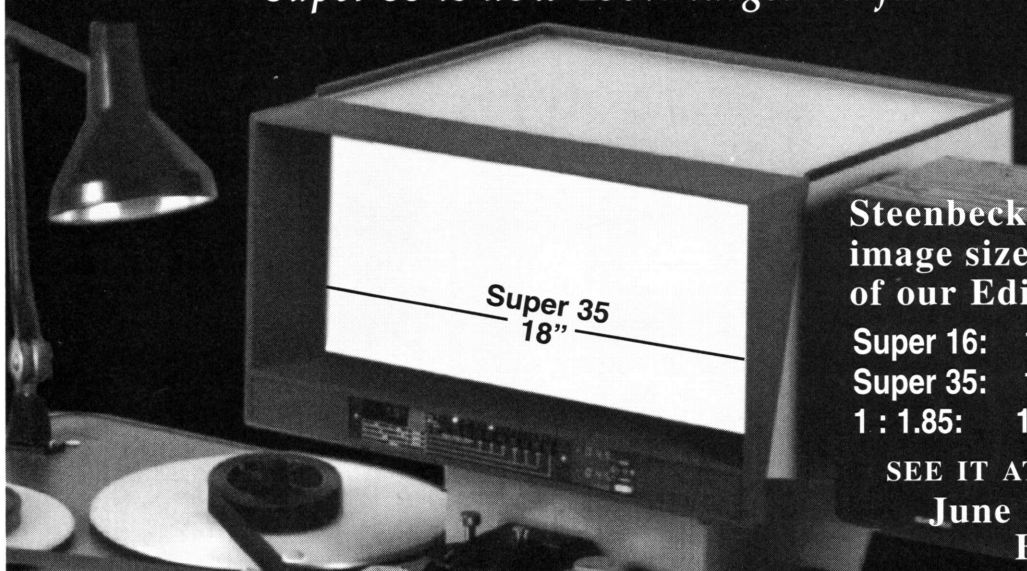

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credible for moonlight. If you need to show scenery and landscape in a night scene, the day-for-night technique can look smoother and more realistic than using lights and shooting night-for-night. Day-for-night is harder on the actors, however — they have to create an "emotional" night in full daylight.

Dusk-for-night or shooting at magic hour gives the best of both worlds. The fading sunlight gives a soft ambience over the entire landscape, but still gives the actors a more realistic sense of the night. The disadvantage of this strategy is that it passes very quickly.

To take full advantage of "magic hour" when shooting a dramatic scene, set up the wider master shot and shoot three takes in a row — one just before the light is right, one at the seemingly perfect moment, and one right after that moment. This procedure brackets the scene and helps prevent exposure misjudgments.

The coverage can be shot later and cheated with lights to match the "magic" master. As an alternative to cheating the coverage, one can shoot the closer shots simultaneously to the master shots, placing the cameras side by side with the fill light in between.

As the conference wound down, Zsigmond gave us some final gems. Know what you want in a scene — have it in your head before you start. Put the camera in the right place. Create an expressive mood appropriate to the scene.

Marty Ollstein, a feature cinematographer and director, teaches advanced cinematography at Columbia College and the Academy of Art College in San Francisco. He has recently been working on the development of a new generation of filters that will (it is hoped) bridge the gap between traditional and digital cinematography.

Point, Counterpoint: DVD Formats Proposed

Disc system will likely supercede videocassettes.

by Frank Beacham

Digital Video Disc (DVD) — the likely successor to the VHS videocassette as the next home movie format — is on a fast track to the marketplace even though two incompatible versions of the format still threaten a marketing war.

An alliance of nine of the world's top consumer electronics, software and entertainment companies have proposed a new dual-sided five-inch digital video disc (DVD) format with enough storage capacity to hold two full-length feature films. That new disc format, created by Toshiba and Time Warner, is incompatible with a single-sided five-inch high-density multimedia CD configuration proposed last December by Sony and Philips.

The alliance's format became the instant front-runner as an industry standard after Sony announced it would study its specifications in an attempt to agree on a single DVD format. Then Sony did a quick turnaround and announced it will not support the competing format.

"Sony believes the Philips/Sony specifications provide the best option for optical media for the coming multimedia era," said Nobuyuki Idei, then managing director of Sony Corp.

Soon after that statement was released, Idei was named Sony's new president. In his first interview with reporters after his promotion, Idei backed away from a potential format war, saying that Sony and its competitors should reach "a common solution" that won't confuse or slow the growth of the new DVD market. However, he said, no negotiations on a compromise have been scheduled.

At least for now, both Sony/Philips and Toshiba/Time Warner vow publicly to take their incompatible formats to market next year. If that happens, a new consumer video format war — reminiscent of the Betamax versus VHS battle in the Seventies — could be in the offing.

The alliance format is being backed by Toshiba Corp., Time Warner, Inc., Matsushita Electric Industrial Co. Ltd., Thomson Consumer Electronics SA, Hitachi, Ltd., Pioneer Electronic Corp., Zenith Electronics Corp., MCA, Inc. and MGM/UA. Additional support for the format was announced by Victor Co. of Japan (JVC), Mitsubishi Electric Corp., Nippon Columbia Co. Ltd. (Denon) and Turner Home Entertainment.

The alliance disc resembles a conventional music CD. Each side can store up to five gigabytes of data, a capacity 15 times greater than available on a standard CD. The double-sided disc is formed by back-to-back bonding of two 0.6mm-thick five-inch discs. The bonding process is similar to that now used to manufacture the current generation of video laserdiscs.

The alliance format uses variable MPEG-2 digital image compression technology. The system allows a peak data transfer rate of 10 megabits per second and can sustain an average transfer rate of 4.94 megabits per second for the full 135 minutes on each side.

The DVD format displays film in 4:3, 16:9 and standard letterbox formats. "This is not what the cinematographers would like to see," said Christopher J. Cookson, senior vice president of technical operations at Warner Brothers. "What we are trying to do is be realistic about the aspect ratio of the TV sets that exist in the marketplace and try to provide something that plays in proper proportion. The issue here is to adapt to available screen sizes and shapes and to lay a picture with appropriate black borders." Cookson said issues of scalability to other display sizes might be addressed in a second generation of the format that is scheduled for introduction in 1998.

> **. . ."Think of it instead as a very powerful and cost-efficient storage device."**
>
> **— Gerald M. Levin, Time Warner's chairman and CEO**

A 135-minute disc provides a minimum of three language channels and four subtitle channels and has the ability to carry as many as eight languages and 32 subtitles. This allows producers to put multiple language versions on one disc, thus reducing mastering and inventory costs and making it easier to enter a large number of markets simultaneously. Consumers will be able to choose either a dubbed, subtitled or original language version of a film. Other features include Dolby AC-3 (5.1 channel) surround audio, parental lock out capability, and current audio CD playback compatibility

The alliance format has capabilities beyond viewing video movies. It can be used in computer-related applications both as a server supplying digital transmission networks and as a very large-capacity ROM that

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supports full-motion video in multimedia. As a music platform, the format could be used for longer playing, higher fidelity replacements for conventional CDs. The DVD can also support high-definition television when blue-laser technology becomes available.

At the December announcement, the proposed Sony-Philips standard specified approximately 3.7 gigabytes (GB) of data on a single-sided, single layer disc. The specification also included a single-sided dual-layer disc which enables a doubling of disc capacity to approximately 7.4 GB. This enhanced storage technology was billed then as a future capability being developed in collaboration with 3M. In apparent response to the greater capacity of the alliance disc, Sony has now put the 7.4 GB dual-layer disc on the fast track. A Sony spokesman said demos of the dual-layer disc would be conducted in late April.

As a video carrier, the standard Sony-Philips disc could hold about 135 minutes of MPEG-2 quality video together with multitracks of compressed digital audio and subtitling.

In a white paper on their disc, Sony-Philips argued that their single-layer design eliminates "various production problems associated with laminated (two-layer) discs, including the need for additional molding, sputtering and coating stages; longer production cycles; layer separations due to poor bonding and lower manufacturing yield rates."

The manufacturers also argued that a single substrate design avoids the complex and expensive servo mechanisms and optical pickups that laminated disc players have traditionally required. As a result, they say, the Sony-Philips design can be manufactured with only minor modification at dozens of existing compact disc replication facilities worldwide and produced at a cost that's similar to that of conventional compact discs.

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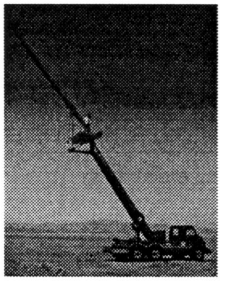

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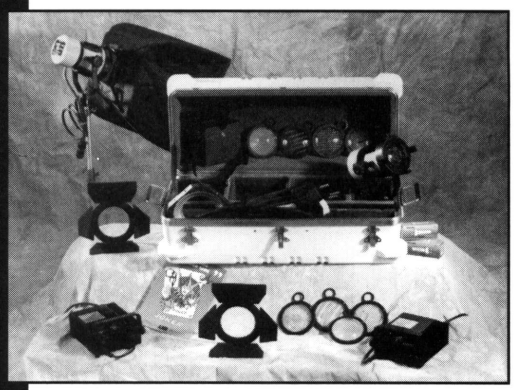

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Though the proposed DVD formats are incompatible (at least for now), they share similar technical parameters that could change the way home video is sold and viewed. Being digital, all DVD content is reduced to the "1s" and "0s" of a computer. By limiting how that "data" can be accessed, the motion picture studios gain a level of control they never had in the analog world.

For one thing, in the name of preventing piracy, they can stop all copying. Copying for personal use — a long cherished "right" of video buffs — will come to an abrupt end because digital video can be made copyproof. Even the analog copies can be thwarted. From day one, DVD is being offered as a viewing-only system.

Viewing patterns can also be controlled. For example, since the manufacturing cost of a five-inch CD is only pennies, the studios could choose to virtually give away an encrypted (scrambled) DVD but charge consumers for an electronic "key" that allows viewing access to the disc. Such a key, which would probably be issued in the form of a "smart card," could be used to impose a wide range of restrictions on the use of a video release.

"When the movie is new, the studio might charge five dollars for a key that allows a single viewing. When the movie gets a little older, there might be a charge of three dollars for a viewing. At a certain date there might a five-dollar charge for an infinite viewing key," said Andy Lippman, assistant director of the Media Lab at the Massachusetts Institute of Technology. "In reality, the cost of the disc is inconsequential in this scenario. What you are doing is distributing only a license key and charging only for that key."

The DVD is a marketplace enactment of a concept proposed by the Media Lab in the mid-1980s known as the "paperback" movie. "The whole idea of

paperback movies was that you distribute the movie on a medium so inexpensive that you fundamentally only sell the license to view it," said Lippman. "The advantage of encryption is it allows you not to care what happens to the disc. It can be a giveaway."

Though the first generation DVD players will not use encryption, Lippman said, there has been discussion among the sponsoring manufacturers about including an encryption feature and enabling "smart card" on second generation DVD players if the sponsoring companies perceive that they need it.

The DVD shares the alliance format's capabilities beyond viewing feature films on video, such as computer-related applications, improvements on conventional CDs, and support of high-definition blue-laser technology.

"For a moment, don't think of the DVD simply as a glorified videocassette — one with superior picture and sound," said Gerald M. Levin, Time Warner's chairman and CEO. "Think of it instead as a very powerful and cost-efficient storage device. This storage device can dramatically enhance multimedia applications, bringing to them, for the first time, true high-quality, real-time, full-motion video."

Both proposed DVD formats encompass key elements proposed by the Hollywood Digital Video Disc Advisory Group, an ad hoc body of entertainment industry executives formed to identify the essential parameters needed for the next home entertainment format.

The advisory group recommended a carrier capable of holding a full-length feature film with a quality higher than that of current tape and laserdisc systems. It also specified surround sound, multiple language and multiple screen size capability, as well as parental lockout and an unspecified copy protection system.

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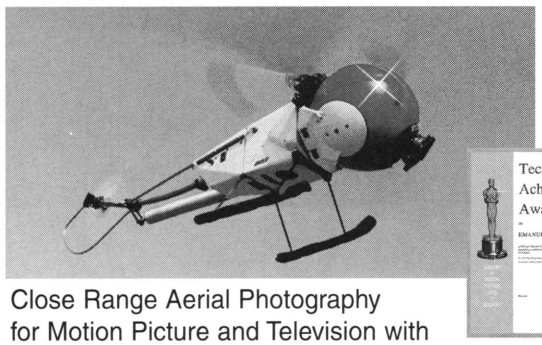

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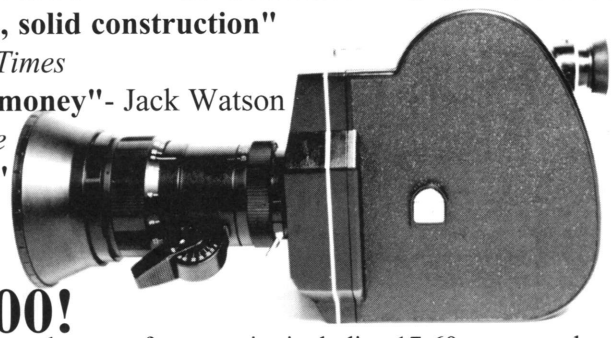

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Haiti "Invasion" Seen Through the Eyepiece

Newsgathering in the hot spots of the world can be unnerving.

by Lisa Seidenberg

Early in the morning of September 19, the news came crackling over my Sony shortwave radio: air and land forces of the United States government were beginning the first wave of "Operation: Uphold Democracy." Helicopters had landed at the Port au Prince airport for an "invasion" that had turned peaceful as a result of final-hour negotiations by a delegation led by former president Jimmy Carter.

This was not good news. That it was peaceful was fine, but an invasion of any sort was not supposed to happen while I was sitting on the border in the "no man's land" between Santo Domingo and Haiti with 47 boxes of television equipment — a flyaway satellite dish, two Betacam cameras, a Beta editing package — and no passport. As my British traveling companions kept saying, it was a bloody mess.

We didn't know that the situation would worsen as the day passed. The border guards, who had taken our passports in the morning along with enough dollars to outfit their entire village, began to reveal themselves as thugs of the paramilitary police who had terrorized the country for the past several years — one of the reasons the GIs were arriving in the first place. Making the situation even more surreal was the fact that, as a result of that morning's news, there was no longer any government.

The idea of being in a nation of armed thugs where no one is in charge began to work on my nerves. No one was in uniform, there were no obvious badges of authority save for the pistols hanging from belt loops and machine guns laying casually across a lap or propped against a table. I quietly climbed up into the back of the open-top farm truck where our equipment cases sat and unpacked the most comforting items of gear ever invented, a mag-lite and a knife. We weren't in Kansas anymore, but I *was* from New York.

How did I end up in this situation? Only three days before, I had been gearing up to shoot a midnight sacrifice of chickens, a Hasidic New Year's ritual in Brooklyn, for director Karen Kramer's documentary *Days of Awe*. As I was trying to decide how much light the chickens would need, and whether or not, as director of photography, I needed to wear a hat and ankle-length dress as is the Orthodox custom for women, the phone rang.

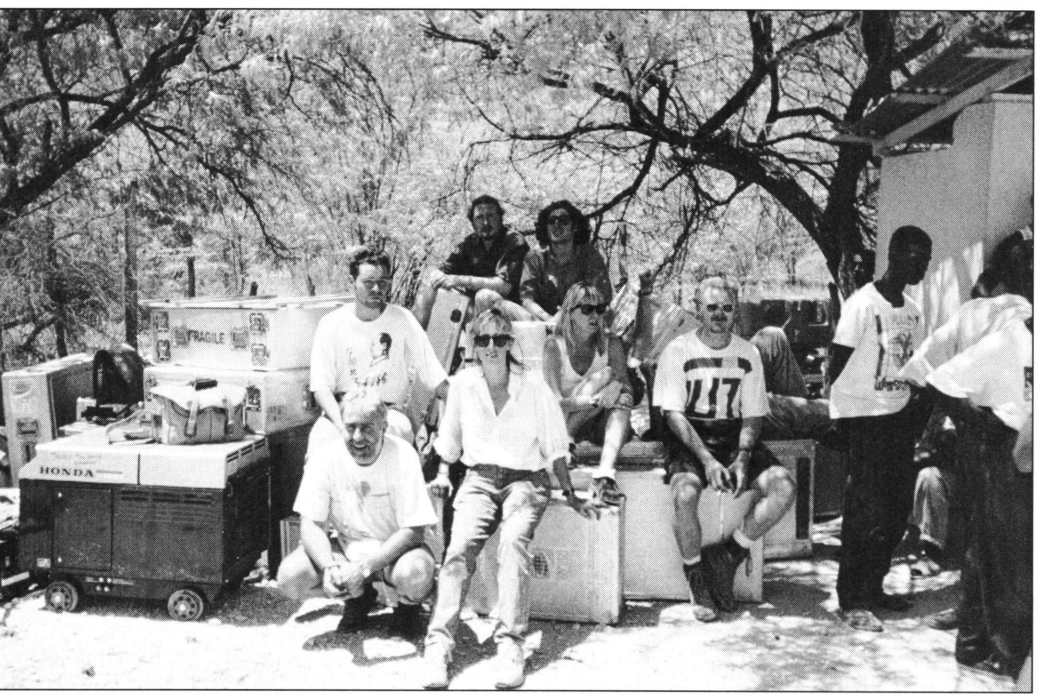
It was Bob Sullivan, New York Bureau Chief for North and South America for Worldwide Television News (WTN), seeking recruits to cover the imminent invasion of Haiti by United States air and ground forces. WTN is a British-based television news service that supplies international coverage for ABC News, CBS News, *Macneil/Lehrer Newshour* and dozens of other broadcast clients around the world.

Before I could say "flak jacket," he passed the phone to Dolores Wilson, who is in charge of "Specials," the rapid-deployment forces of the news agency business. Nothing was definite, she said softly, but just in case, could I fax her my passport information?

A few hours later, "just in case" translated into "your flight to Santo Domingo leaves JFK first thing in the morning."

Although I had been in war zones before — in Lebanon, Cambodia, Vietnam and Kurdistan — it always stirs up some special kind of anxiety, mostly anticipation. Nevertheless, it was as if the

Below: ***The author (in white blouse) and fellow journalists waiting to cross into Haiti from the border between Haiti and Santa Domingo, September 1994.*** **Opposite page:** ***Downtown Port au Prince, where journalists from all over the world had converged to cover the potential showdown between Haitian police and U.S. soldiers.***



Photos courtesy of Lisa Seidenberg

Green Berets had a special mission up-river, and it was psychologically impossible to refuse. Besides, I needed a tan.

In Santo Domingo I linked up with a four-man crew from Starbird, a British satellite company owned by WTN. The team was headed by Sean Russell, at 27 a veteran of every recent world disaster from Somalia to Bosnia. He had just returned home to London after six weeks in Rwanda, and was, to put it mildly, not in a conciliatory mood. Hours later, he proved to be the most stalwart company one could ask for when things turned ugly at the border.

The operative system, the closest thing to any kind of bureaucratic machinery, was something repeatedly and ominously referred to as "The List." The rules were simple: if your name was on "The List," you could pass through to Haiti. If not, you could return to the Dominican Republic side, a treacherous mile away through a rocky road that snaked through a deep valley and which, it was critical to know, closed its gates at 6 p.m.

Six of us not on "The List" decided to wait, while the others departed with the equipment. There were at this point a dozen or so other journalists who were, one by one, either giving up and heading back or making furtive deals with freelance taxi drivers to fix their visa.

"The List" was the result of a convoluted arrangement to permit visitors to travel to Haiti; it had evolved as a result of the United Nations embargo. The airport had been closed for some time (this had necessitated the overland crossing in the first place) and no vehicles originating in the Dominican Republic were allowed to cross the border. In order to obtain an entrance visa, one had to make arrangements with Chatelaine Tours (quickly dubbed "charlatan tours"), a Haitian bus charter company that in more normal times chauffered busloads of tourists to various beaches and hotels.

It was 8 p.m. and my British cohorts and I were lying on the veranda of the makeshift open-air Customs House. One jug of spring water remained, as well as a half bottle of Jack Daniels that was disappearing rapidly. I had my Betacam at my side but was not about to risk turning it on. There did not appear to be any electricity in any direction, nor any comforting streetlamps or running water. Because of the high heat all day — approaching 100 degrees — dehydration was a real worry. So was getting to Port au Prince in

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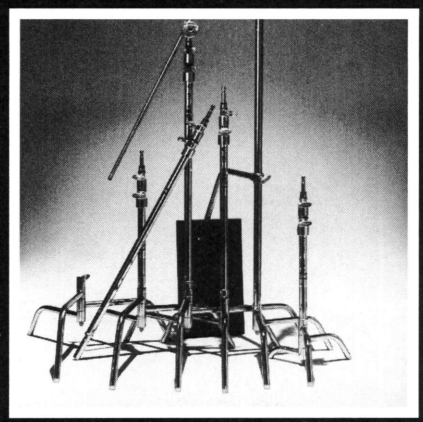

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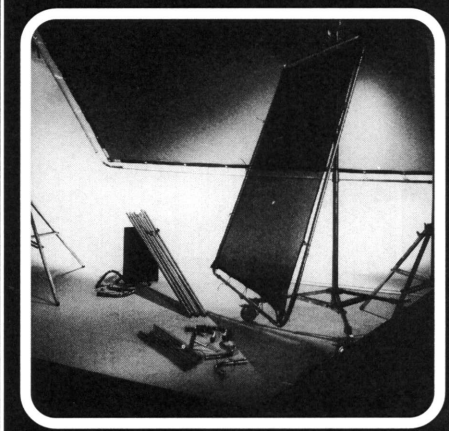

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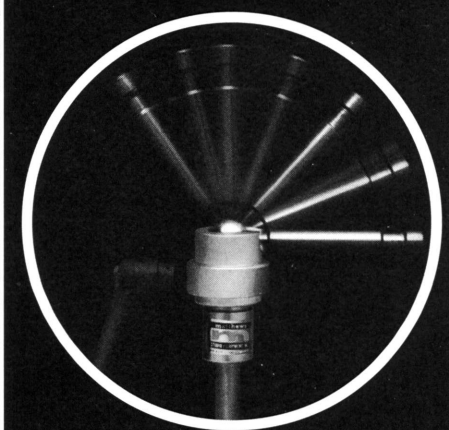

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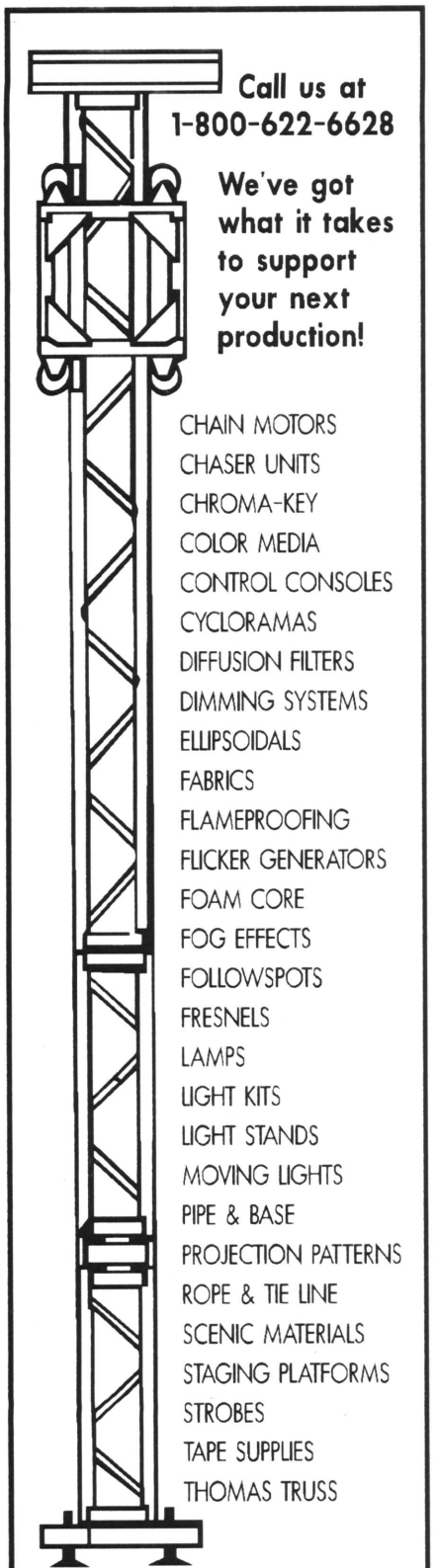


one piece.

As the darkness increased, I felt the scrutiny of eyes following my every movement. I was aware finally that I was the the only blonde, the only woman. This is a country with a long history of unspeakable violence, corruption, and voodoo, where rape is a national sport and a weapon of intimidation documented by human rights organizations.

Send in the Marines!

The funny thing was that the Marines were actually on their way, but might take days to reach this godforsaken place.

Finally, one of the Haitian men ushered us into a back section of the office. By candlelight, I watched the British passports get stamped and some more dollars changing hands. In horror, I realized that my passport was pushed to one side. "Go now!" shouted one of the men. "Vite! Vite!" Obviously this had been an unauthorized procedure.

I grabbed my passport from the table and ran outside with the Brits as a brightly painted mini-bus/taxi pulled up. Everyone began to pile into the back, when I heard a voice in the darkness say something to Sean, just in front of me.

Sean turned to me. "He says, 'The deal was just for the guys.' He wants you to stay here. I guess they like you." He tried to suppress a smirk.

I gave him a look and he turned back and shouted (to my relief) "No, no, no!" as the minibus started to shift into gear. Grabbing onto the back as it started to pull away, I stared back one last time into the darkness, at the menacing outlines of the border guards, the sound of their voices still arguing and threatening, receding into the night.

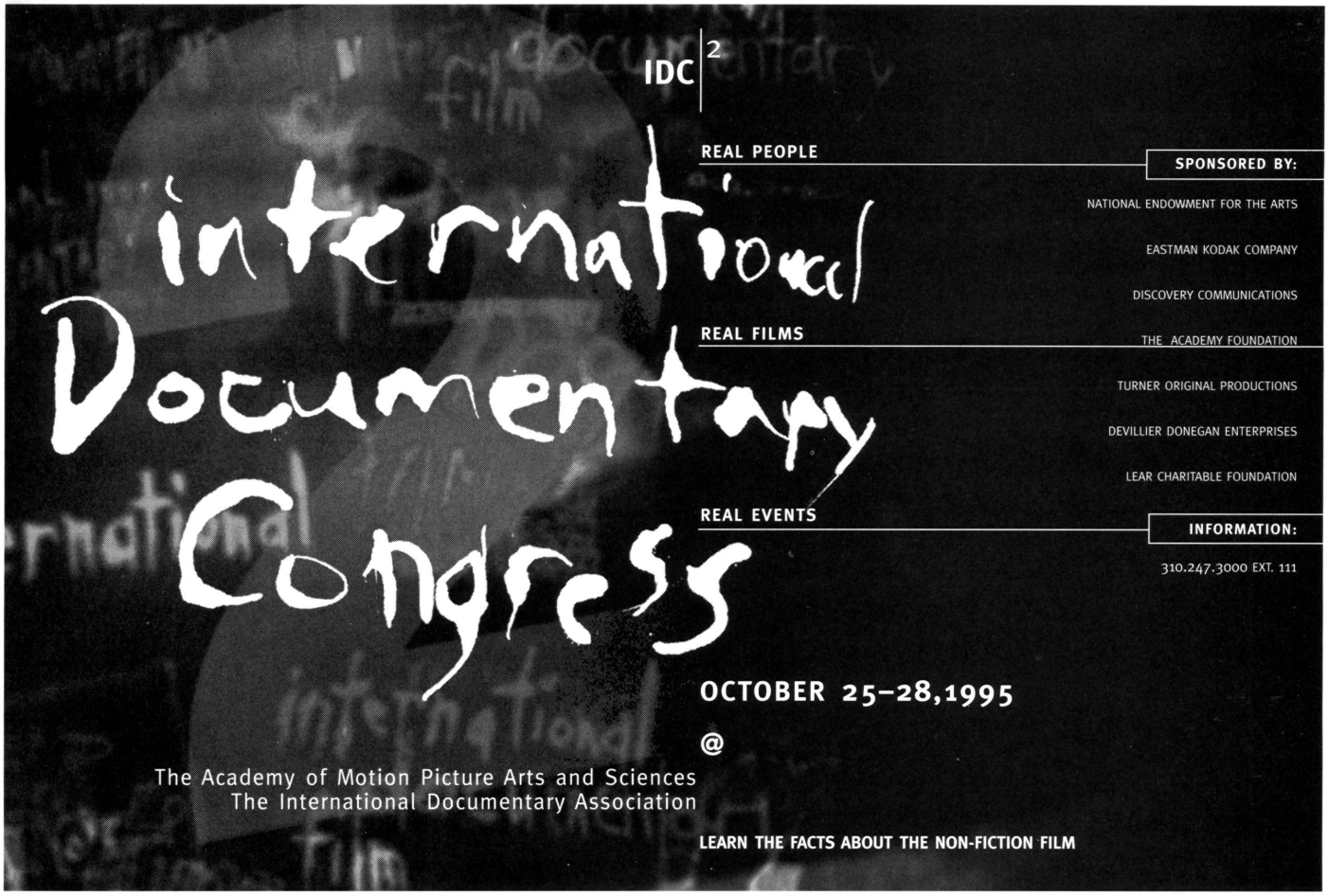
It was now three hours past curfew, and Port au Prince was two hours away, but it was exhilarating to finally be in motion. Less than 24 hours later, the flyaway dish was perched atop the El Rancho Hotel, the Betacam editing system was cabled and ready, and the satellite telephone was ringing nonstop with desperate calls from New York and London. "Hi Lisa. It's great to hear your voice!" It was Dolores Wilson. "Any problems crossing the border?"

As I began to organize crew requests for the day, breathless couriers were rushing into the two-room hotel suite that served as WTN's bureau. They were carrying the morning footage from downtown Port au Prince, where a man had been stabbed with a knife. The raw video zoomed in to show stringy tendons popping out of his bloody forearm, a frenzied crowd of Haitians looking on, and even more frenzied camera crews and photojournalists maneuvering for the best angle.

Making the situation even more surreal was the fact that, as a result of that morning's news, there was no longer any government.

'They will love this in Japan!" said Cristina Mesquita, WTN's news bureau chief, who is petite and blond and Brazilian and doesn't look like someone who would relish spending six months in Sarajevo. (But she would.) It was the first show of violence since the American military arrived, and therefore, possibly, the first test of their control.

I decided it was time to leave the relative safety of Petionville, a suburb that sits on the hilltops 20 minutes and a world away from the hubbub of Port au Prince. Although it had only been a few hours since the previous evening's covert arrival, I had already seen one too many network journalists strutting around in their Banana Republic safari jackets, yelling importantly



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into their walkie-talkies. Their real concern at this point was how to justify huge expenditures for a war that didn't happen.

The port at Port au Prince is a bustling scene filled with freelance vendors selling gasoline from discarded soft drink bottles, barefoot and ragged children begging for morsels of food, water-sellers balancing steel pots of water on their heads. One of the city's notorious slums, Cité Soleil, is also there. Many of once-deposed (and now reinstated) President Aristide's supporters live in Cité Soleil, and thus it was a frequent target of anti-Aristide violence from the paramilitary group FRAPH.

For the first time, American soldiers were in plain view, perched atop barricades, as sweat poured out of their helmets and onto their heavy fatigues and flak jackets. They waved and smiled to the crowd like newly crowned beauty queens, all freckles and clean-cut wholesomeness.

Walking around with a Betacam on my shoulder, I felt relatively safe, but realized it was the kind of situation that could change for the worse in an instant. Indeed, as that thought arose, a truck filled with the paramilitary police careened down the street and headed straight into the crowd where I was standing, an intimidation tactic that they were obviously used to employing to great effect.

As the crowd began to scramble, the GIs stood up, and with a wave of their arms gestured for the Haitian police to go away. Miraculously, the formerly feared and hated goons complied and drove off. The crowd went wild with joy, cheering the Americans who were now their heroes. I rolled off some footage and moved onto to another area.

One of the more interesting assignments was with Charlayne Hunter-Gault, one of the anchorpersons for the MacNeil/Lehrer Newshour on PBS. She and her producer, Jeff Goldman, were scheduled to do

daily reports as well as "live" stand-ups, which for reasons of convenience are actually often taped.

That afternoon Jeff came running into the bureau. "You have to leave right away!" With no time to find a sound person, I grabbed the camera and tripod, a Lowel-light kit and an assortment of microphones, and jumped into the back of their Jeep. Jeff had to stay behind to coordinate a satellite transmission of material to New York, so it was just Charlayne and me and a young local translator named Connie.

The driver sped along bumpy back streets for what seemed like forever and everyone was very edgy. It turned out that we were about to do an exclusive interview with Evan Paul, the mayor of Port au Prince, who at that point had been in hiding for the past three years and whose whereabouts were a matter of great secrecy and security. On the way, we picked up one of the mayor's associates, who led us to the mayor's hideaway, a fairly opulent villa tucked away behind locked gates, deep in the lush green hills.

It was, of course, a difficult shoot. Three people had to be miked, and the interview was to be conducted on a semi-outdoor terrace at five o'clock in the afternoon, as the light was changing continously. To make matters worse, the mayor was very dark-skinned and the translator, who had to sit next to him, was very pale. I decided to place them both in a shaded corner to minimize the changing color temperature, and boosted the camera gain, which raised the overall level and brought more detail to the dark areas. As with much of this type of shooting, to get it down on tape at all is half the battle. As we were finishing the interview, a crew from German TV pulled into the driveway. So much for exclusives!

On another day, I was restless and decided to take a ride

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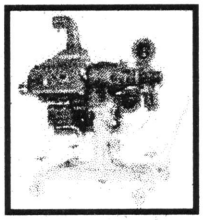

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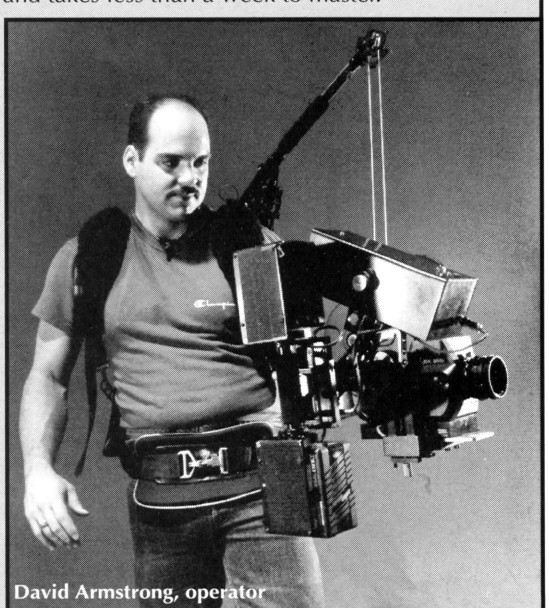

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to the airport, where many of the 6,000 American soldiers were camping out. After passing through the airport entrance, which was now a security checkpoint piled with sandbags on which the guards rested their machine guns, I walked around and chatted with some of the GIs who were playing cards and killing time.

I overheard a young female officer speaking French-accented English, and approached her. Her name was Maggie; she had been born in Haiti and was on her first trip back home in a very long time. I positioned her near the airport entrance, her face half in light, half in shadow. She was relieved to tell someone her story, and her voice was cracking as she described landing back in Port au Prince in such circumstances. "I couldn't hold back the tears," she said. I rushed the story back and it was broadcast by ABC's *Good Morning America*, in addition to being sent by satellite to other stations around the world.

After another ten days of chasing American MPs as they roamed the city, it was time to go. Besides, the army liaison office had announced that they would no longer allow journalists to hitch rides on military transport, still the only aircraft at the airport. No way was I going back over the border.

Boarding the C-130 for Hope Air Force Base in North Carolina, I waved good-bye to Haiti, but it wasn't Haiti that I had really seen. It was Haiti filtered through the thick lens of international news coverage, which is its own country. I felt shortchanged, but it was nice to go home.

She: Empire of the Imagination

Epic adventure tale has it all: reincarnation, arcane rituals, cannibalism and a domineering female monarch.

by George Turner

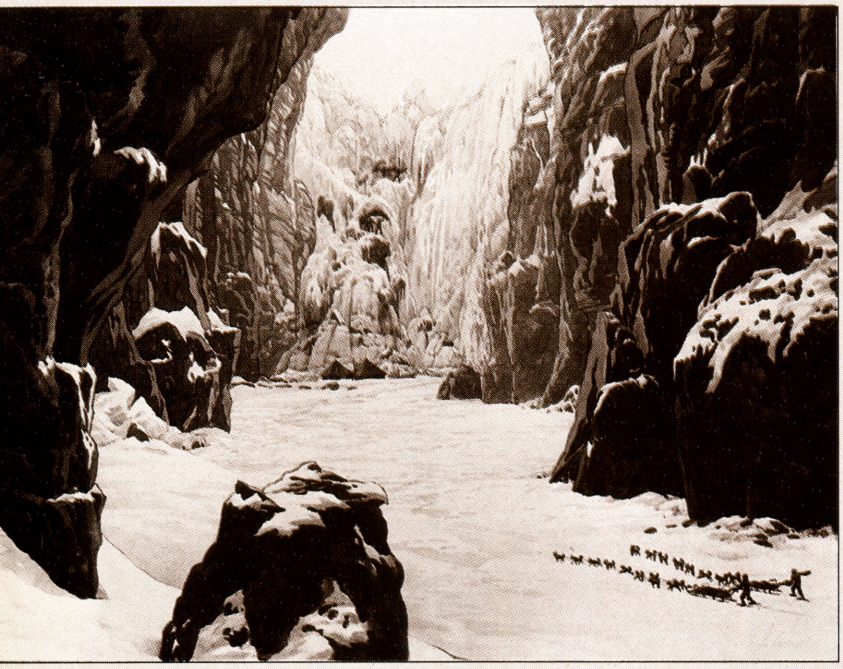
"My empire is of the imagination," says the cruel monarch known as "She-Who-Must-Be-Obeyed," in Merian C. Cooper's production, *She*. The truth of these words was uppermost in the mind of that gutsiest of producers when he decided to make a modern — 1935, that is — talkie version of H. Rider Haggard's popular 1887 novel.

Haggard named his story after a rag doll he had as a small child, and thus stumbled upon the perfect title for a fantasy about a beautiful 2,000-year-old queen who rules her subjects by terror. Ayesha, a young Egyptian woman, attains seemingly eternal youth when she discovers the "flame of life" deep in the African jungle. She impetuously murders her lover, Kallikrates, when he tries to leave her for another woman, and mourns him through the centuries, certain in her belief that he will be reincarnated and return to her. So he does, she believes, after 2,000 years, as the young English explorer, Leo Vincey. When Leo admits his love for Ustane, a native girl, Ayesha steps into the flame and tries to induce him to do the same, but this time she shrivels into an ancient mummy.

Several silent movie versions of the tale had been filmed, the last being an Anglo-German production by G. B. Samuelson, with Betty Blythe and Carlyle Blackwell, which was made in 1925, the year Haggard died. Universal had bought rights to the novel in 1932 and hired playwright John L. Balderston to adapt it for the screen as a proposed vehicle for Boris Karloff and Tala Birell. The Balderston script is a grim horror story in which all the principals die. The gloomy ending upset genial Carl Laemmle, president of Universal, and the property went into turnaround. Cooper, who in 1933 succeeded David O. Selznick as vice president in charge of production at the financially troubled RKO-Radio Pictures, bought the script from Universal and tried unsuccessfully to borrow James Whale to direct it. Whale had directed *Frankenstein*, *The Old Dark House*, and *The Invisible Man* for Universal, and Cooper at that time intended to produce *She* as an all-out horror show.

Cooper suffered a near-fatal heart attack in September 1933 and resigned his job at RKO the following May. In the meantime, he and his multimillionaire friends, John and Cornelius Whitney, had become financially interested in the Technicolor Corporation, which was trying to get its new three-color process off the ground. The Whitneys and Cooper also formed Pioneer Pictures specifically to produce pictures in Technicolor. To finish his contract, Cooper made a deal to produce two epics independently for RKO, *She* and *The Last Days of Pompeii*. It was his intention to make these films in Technicolor. RKO granted him a budget of $2,000,000 to cover both productions, with about $100,000 allowed for the use of Technicolor.

Cooper had wanted both pictures to be directed by Ernest B. Schoedsack, his co-producer and director of *Grass*, *Chang*, *The Four Feathers*, *The Most Dangerous Game*, *King Kong*, *Blind Adventure*, *Long Lost Father* and *The Son of Kong*. He also wanted Schoedsack's wife, Ruth Rose, scenarist of both *Kong*



Above: ***Mario Larrinaga's concept drawing of the Sugal Barrier. He also did the matte painting for the scene.***
Right: ***Noble Johnson introduces Nigel Bruce to the Nagudah ceremony.***

films, to write the screenplays. She agreed to write both pictures, but stated frankly that in her opinion it would be impossible to film *She* effectively. She never changed her mind about that, despite Cooper's enthusiasm and reassurances. He was even planning to film Haggard's sequel, *Ayesha*. Schoedsack agreed to direct *Pompeii*, but nixed *She* as being unfeasible.

Abandoning the darker concept of the Balderston script, Cooper and Rose decided to concentrate on strange adventure and stranger romance. "Africa has lost a lot of its mystery," Cooper announced, and decreed that the setting be moved from the Dark Continent to Arctic Asia! No longer a hideaway in the jungle, the lost kingdom of Kor was relocated to a temperate zone inside a sleeping volcano surrounded by glaciers. As she had done for Kong's Skull Island, Rose created a tersely phrased language for Kor, derived in part from Arabic and complete with nouns, verbs and conjugations. Dudley Nichols wrote some added dialogue.

While Cooper was searching for an actress possessing the great beauty, commanding voice and regal bearing demanded by the title role, he asked Rose's opinion. "There's only one actress who might just possibly put it over," she replied, "and that's Greta Garbo." To induce MGM to loan out its celebrated Swedish mystery lady was a task beyond even Cooper's powers of persuasion. All the major studios in the early Thirties had their own hopeful Garbos under contract. RKO's was Gwili Andre, who already had failed as a box-office draw, as had Universal's Tala Birell, Goldwyn's Anna Sten and Fox's Greta Nissen. Paramount's Marlene Dietrich had proved successful in large cities, although her following in middle America was small, and Paramount had no intention of loaning her out. Paramount also declined to lend Cooper his choices for the juvenile leads, Joel McCrea and Frances Dee, but they did offer the youthful Randolph Scott, at that time a second-string leading man and Western star. Cooper gave the ingenue role to an RKO contractee, Helen Mack, and the principal character role to Nigel Bruce, recently arrived from England. The other players were all from the freelance ranks.

When at last Cooper decided upon an actress for the title role, she was Helen Gahagan, wife of screen star Melvyn Douglas. The tall, black-haired, blue-eyed beauty from Boston had eight years' experience on the New York stage and 2 ½ years in Europe and America as an operatic soprano. She had signed with RKO in 1932, but had never made a film until Cooper summoned her for *She*. It proved to be her only movie. Nine years later she became a member of Congress. She retired from politics in 1950 after being defeated by Richard Nixon in an unusually bitter Senate race.

The script conferences whelped forth an increasingly fantastic yarn beyond even the imaginings of Haggard. At one point Cooper asked Rose, "Is there anything else we can put in there to make it more exciting?" She replied, "It already has everything but a

sabre-tooth tiger." "Great!" Cooper enthused. "Why didn't I think of that? A sabre-tooth tiger! Write it in!" She tried to explain that she was only kidding, but was unable to talk him out of it. She settled for a *dead* sabre-tooth frozen in a glacier. Cooper agreed, but when the sequence was filmed he insisted upon making the beast as large as an elephant. ("It's not big enough" was the producer's most characteristic complaint).

Rose was also unable to talk Cooper out of having a herd of mammoths attack the explorers. This was planned as a big production number with Willis O'Brien animating the shaggy proboscidians as he had done with the animals of the *Kong* films. Cooper reluctantly agreed to omit the sequence when it became evident that the production was overstepping its budget.

Cooper had watched the career of Irving Pichel, a stage-trained actor with a yen to direct. He had worked as dialogue director on *The Most Dangerous Game* (1932), and Cooper had given him co-director billing, then let him direct a good modest-budget mystery, *Before Dawn* (1933). Pichel had asked repeatedly for further directorial assignments, but in vain until he was hired for *She*.

Experience in making *King Kong* had taught Cooper that to describe a scene to a dozen persons

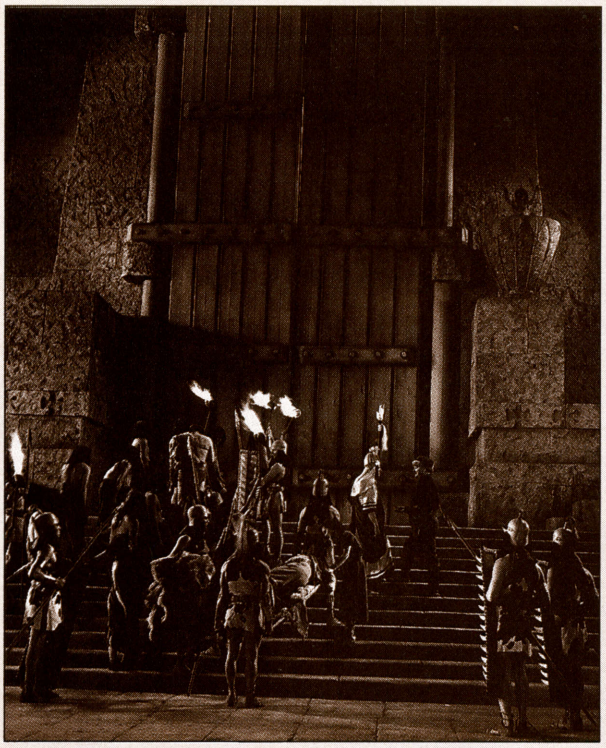
would produce a dozen different mental images. Drawings, however, leave little room for variant interpretations. Cooper said that he considered *She* to be an art conception, inasmuch as the lost kingdom would have to be created from scratch. For this reason he made Lansing C. Holden, a noted architectural designer, co-director of the film. While Pichel was in complete charge of the actors, Holden shouldered responsibility for the visual aspects of the picture. In designing the furnishings of Kor it was necessary to consider the customs and needs of the Korish, including their dress, weapons, musical instruments, tableware, cosmetics, foods, flowers, and methods of supplying light and heat in a kingdom carved from the heart of a mountain of marble. Holden also contributed ideas for the sets, working with the unit art director, Al Herman.

Collaborating with Holden and Herman was Harold Miles, who also contributed to the production design but whose primary responsibility was to create an original native costume for the men of Kor. He designed the clothing of dignitaries, soldiers, guards and priests — including two styles of hammered metal ceremonial masks worn by the priests. The soldiers are divided into three groups, each with distinctive clothes, helmets and weapons. Two types of shields, designed as both offensive and defensive weapons, bristle with steel points and another is ringed with sharp animal teeth. The steel-headed lances are long and heavy; one is shaped like a flame, another has sharp projections on one side, and the third is like an arrowhead edged with teeth. The swords are long and flat with jeweled hilts. Three elaborate costumes were designed for Billali, the queen's advisor. The high priest wears a metallic robe, a feathered headdress and a fringed cape. He wields a sacrificial knife with a flame-like blade and a sculpted handle symbolizing She in the flame of life. Fourteen priests wear black gowns and hammered copper masks, a second group is dressed in gray with silver masks, and others wear horned headdresses. Dancers and musicians are decked out in a wild variety of costumes.

Ailine Bernstein, a leading Broadway stage costume designer (and sister of Leonard Bernstein) was hired to provide exotic finery for the queen, with changes of costume for each sequence. One is a gold robe with a cloak decorated with 800 long feathers arranged to resemble flames. There are variations of her crown and of cloaks and drapes. In contrast to the queen's flame-like silken raiment are the severe, embroidered dresses for Helen Mack.

Some 1500 conceptual drawings were prepared by a staff of artists under the supervision of Holden and Miles. These included small thumbnail notes and script sketches, continuity drawings (what are now called storyboards), and larger illustrations of key scenes rendered in detail. The other illustrators were Mario Larrinaga, Dan Sayre Groesback, R. Doulton Stott, George Russell, Vsevelod Ulianoff, Stanley Johnson and Charles Ohmann.

The result of this almost unprecedented collaboration of artists is a marvelous look that combines elements suggestive of Grecian, Egyptian and Mayan art with the geometrical quality of late 1920s Art Deco.



***The gates of Kor, courtesy of* King Kong.**

Previous experiences with the RKO executives should have prepared Cooper for the blow that came as preproduction neared completion. First, they repeatedly delayed the starting date; the studio was in dire straits financially (it was, in fact, in receivership) and funds were being diverted to more immediate needs. On December 12 Cooper wrote President B. B. Kahane that "We are all ready to start building the miniatures whenever the money is available. I just checked the miniatures with the boys, and they are all enthusiastic and raring to go. Would appreciate this as soon as you are able."

Eventually, Cooper was informed that his budget had been cut in half; he would have to stretch $1,000,000 to cover *both* pictures!

Nevertheless, Cooper continued to campaign for Technicolor right up to the day principal photography began. The answer from Kahane was always the same, a mocking "Yes, you can make it in Technicolor — if you can do it for $500,000." In the summer of 1934, Pioneer's live-action two reeler, *La Cucaracha,* had proved a successful showcase for Technicolor. Even though RKO released the film, the studio executives remained cold to using Technicolor for *She.* On December 1, production commenced on Pioneer's first Technicolor feature, *Becky Sharpe,* also for RKO release. On March 12, 1935, just eight days before *Becky* wrapped, principal photography was begun on *She* — in black & white.

The cinematographer for both *She* and *Pompeii* was J. Roy Hunt, ASC, who, like Cooper, was an adventurous Southerner. He had started out as a newsreel cameraman, and at the age of 21 had filmed the San Francisco earthquake of 1906. While photographing *Daughter of the Gods* in 1915, he'd saved Annette Kellerman's life. During World War I, he had photographed enemy lines from the back seat of a bi-

Helen Gahagan and Randolph Scott.

plane; during World War II, he had served as Eisenhower's head cameraman for the invasion of North Africa; and during the Korean conflict he had photographed enemy lines from a jet plane. He had also invented the blimp camera for Paramount, the Hunt Steamer car, wireless microphones, gyroscope mounts for walking the camera, rapid-speed film printers, and his personal autos. Directors loved him because he could rig on the spot whatever gadgets might be needed.

Many of the crew were veterans of *Kong:* Larrinaga, Herman, composer Max Steiner, effects cinematographers Vernon Walker, ASC and Linwood Dunn, ASC; editor Ted Cheesman, sound effects recordist Walter Elliott, and others.

This *She* begins in London, where the dying physicist, John Vincey (Samuel S. Hinds), asks his American nephew, Leo (Randolph Scott) to carry on the search for the flame of eternal life. A family legend tells of the discovery of the flame in Muscovy 500 years ago by a John Vincey, whose portrait Leo resembles. Leo sets out with Horace Holly (Nigel Bruce), John's associate, to search for the uncharted Sugul Barrier. In a Siberian outpost they find Dugmore (Lumsden Hare), an avaricious trader who agrees to guide them for a share in whatever they find. His adopted daughter, Tanya (Helen Mack) accompanies them. Scaling the barrier, they find all of the ancient Vincey party except Vincey himself frozen in ice with a sabre-tooth tiger they had fought to the death. Spying a bag of gold on one of the corpses, Dugmore, against orders, begins chopping into the ice. This triggers an avalanche that destroys the entire party except for Leo, Holly and Tanya, who have taken refuge in a cave.

The three are surrounded by the cannibalistic Amahaggars, who begin the Nagudah ceremony, during which they try to clap a white-hot metal pot over Holly's head. After a savage fight, the three are rescued by the arrival of Billali (Gustav von Seyffertitz) leading soldiers from the lost kingdom of Kor. They are taken to a verdant sub-tropical valley in the center of which is a palace carved in the heart of a mountain. They are brought to Hascha-Mo-Tet, "She-Who-Must-Be-Obeyed" (Helen Gahagan). They learn that She is hundreds of years old and was the lover of John Vincey, whom she murdered because he turned from her to his wife. In a secret chamber she shows Leo the mummified body of his ancestor. She believes that Leo is her lover reincarnated and fears that he may love Tanya. Trying to regain favor, old Billali suggests they use a veiled Tanya as the sacrifice at the annual ceremony of the sacred flame. At the ceremony, Leo recognizes Tanya as she is about to be stabbed and thrown into a volcanic fire pit. Leo and Holly rescue her and fight their way out of the palace. Thwarting pursuit by toppling a balancing rock which bridges a chasm, they find their way to the Cavern of the Flame. She and Billali are already there. She offers Leo eternal life if he will step into the Flame as she had hundreds of years ago, and remain as her king. To prove that the Flame is actually cold and does not destroy, She steps into it. To everyone's horror she shrivels into an ancient hag and dies at their feet. Billali allows them safe passage from Kor.

The action is staged in stunning settings. The trader's camp lies in a windswept ice field, which was built on a stage. The dogsleds crossing the vast ice frozen lake to the Sugul Barrier are live action composited into matte paintings by Mario Larrinaga. Larrinaga painted the sabre-tooth tiger and its victims, which were photographed as stereopticon plates and projected into the ledge set. The avalanche was staged largely in miniature, including a remarkable down shot in which an animated model of Dugmore falls with boulders of ice. A vast miniature was used to show the destruction of the porters and sled dogs as the avalanche crashes through the ice of the lake.

The Amahaggar caves are impressive, especially in a vaulted area where the hot-potting ceremony occurs. Composited matte paintings depict the fertile valleys of Kor and the mountain containing the palace. The great wall and 60-foot gates from *Kong* were re-dressed as the entrance to Kor, with a dwarf on a high ledge beating a great drum as a signal to open the gates. At the tall art deco gates to the palace itself, visitors are announced by the striking of a metal ring 16 feet in diameter. Within is a large chamber, at the end of which are 36 steps leading up to an opening where She makes her first entrance, from behind a curtain of live steam.

Even this setting is dwarfed by the Hall of Kings, an oval room where the Korish priests annually sacrifice a maiden at the well of the Sacred Flame amid much celebration and dancing. The set filled the two largest stages at RKO-Pathé and the sloping walls were 40 feet high. In the film, matte paintings and miniatures extend the rock walls upward another 200 feet to reveal enthroned colossi of the ancient kings of Kor, so high that their heads vanish into the darkness. The arena-like floor resembles polished marble (actually it was covered in a dark green reflective material). In the center is the well of the Flame. At one end of the room is the throne of She, backed with a mirror mosaic of flames 20 feet high and nine feet wide. Across the room are majestic stairs, at the head of which are huge, ornate bronze doors. Massive oil braziers light the stairs, which are guarded by two statues of rams 15 feet high and 16 feet long.

In only four days, a lot of spectacular action

At the Ceremony of the Flame. Gustav von Seyffertitz and Helen Mack stand in the foreground. The guard at left is future action star Ray Corrigan.

was filmed on this set. A man carrying an unlighted torch is lowered head down from the darkness into the well. With the torch lighted, he is lifted back to a level with the braziers at the feet of the colossi. He swings to light each of the braziers, thus revealing the cruel stone faces far above. The doors open to admit scores of soldiers, priests, musicians, dancers and dignitaries. The weird, angular dances were created by modernist ballet master Benjamin Zemach. Later, Leo and Holly rescue Tanya and hurl the high priest (Julius Adler) into the well. In a spectacular fight, they kill several of the soldiers and set the stairs aflame before they get away.

A hair-raising sequence in a cave follows as the fugitives leap across a chasm onto a delicately balanced rock. Full-scale action, miniatures and glass paintings were combined to create the setting. As their pursuers leap to the rock, Leo and Holly send a half-dozen of them falling to their doom, finally shoving the rock itself into the gorge. The stuntmen actually dropped into a net, and animated figures took over to lengthen their falls out of the frame.

The climactic scenes of She's immolation occur in a weird, cubistic cave room where the geyser of flame emerges periodically. The dissolution of the queen was accomplished smoothly with progressive makeup effects by Carl Axcelle revealed gradually in a series of optical dissolves by Lin Dunn. The spiraling flame is animated into the action.

Principal photography was completed early in May. Scoring, opticals and other postproduction work was then undertaken and, as always, was done "under the gun" for a summer release.

Max Steiner, musical director at the studio, called Cooper "a great friend of music." It was Cooper who insisted upon extensive scoring on the big pictures at RKO beginning early in 1932, a time when most studios had long concluded that pictures no longer needed musical accompaniment now that they had learned to talk. Typical pictures at that time had only main and end title music plus whatever incidental music was depicted on camera. To do otherwise was regarded by many as being hopelessly old-fashioned. Steiner, a product of the Viennese operetta tradition, had composed elaborately descriptive orchestral scores for such pictures as *The Most Dangerous Game*, the *Kong* pictures, *Bird of Paradise*, *Symphony of Six Million*, *The Lost Patrol*, and *The Informer* (which won him the first Academy Award for musical scoring). For *She* he wrote the music he considered to be

Above: *Gahagan and von Seyffertitz watch from throne as Scott and Bruce rescue Helen Mack from High Priest, Julius Adler.* Below right: She *calls forth the Flame of Life.*

the best of his work at RKO.

The music is very closely synchronized to the images, underscoring all of the action and much of the dialogue. Overall it is written in the romantic symphonic style with leitmotifs for the major characters. It includes passages for harp (played by Steiner's wife, Lee) for the love scenes, and a female chorus heard during the sacrifice to the Flame. The queen's motif is mysterious and ethereal. The music for the climactic chase has an exuberance reminiscent of Tchaikovsky's Fourth Symphony.

The creation of the musical score was a daunting task to be surpassed in magnitude only by Steiner's *Gone With the Wind* score four years later. On *She*, Steiner worked day and night to meet the deadline, with regular visits from a doctor who gave him shots to keep him going. He employed three orchestrators and called upon one, Bernhard Kaun, to compose bridges and other necessary pieces of music. Ruth Rose recalled, "I met Maxie in a hallway one day and he was so exhausted his legs were trembling."

As an eye-smiting adventure yarn, *She* is a visual and musical success, but the performances in the leading roles are less satisfying. Helen Gahagan is beautiful and suitably dignified for her station. She is convincing in her cruelty, yet touching in such scenes as one in which she shows Scott that her sandals have worn into the stone steps during her daily visits to the crypt of his ancestor. She is memorable when she tells Bruce, "I am yesterday and today and tomorrow. I am sorrow and longing and hope unfulfilled. I am She-Who-Must-Be-Obeyed." Unfortunately, however, she never conveys the fiery sensuality one expects of the love-crazed queen. Scott's inexperience is a handicap, resulting in a rather wooden performance. Bruce, Helen Mack and von Seyffertitz are more on the mark.

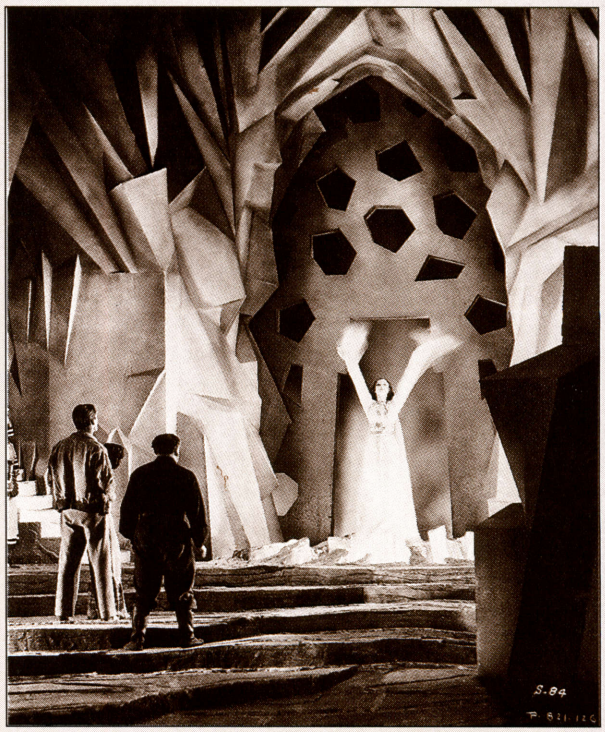
She was launched with an extensive advertising campaign in July, premiering at Radio City Music Hall. It was embraced and rejected in about equal measure, ranging from the Literary Digest's AAAA rating to outright condemnation. Cooper had tried for another *King Kong*, but *She* was too arty to please many of the customers who had reveled in the nature-in-the-raw appeal of *Kong*. *She* failed to return its cost, but it has many champions. ❧

Credits

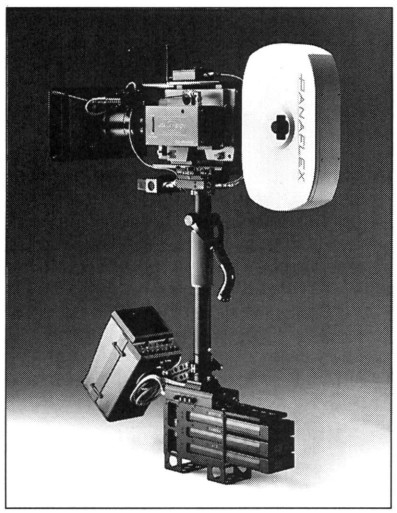
An RKO Radio *picture; a* Merian C. Cooper *production; based on the novel by* H. Rider Haggard; *directed by* Irving Pichel *and* Lansing C. Holden; *associate producer,* Shirley C. Burden; *adaptation, continuity and dialogue by* Ruth Rose; *additional dialogue by* Dudley Nichols; *music by* Max Steiner; *photographed by* J. Roy Hunt, ASC; *photographic effects by* Vernon L. Walker, ASC; *art director,* Van Nest Polglase; *associate,* Al Herman; *sound effects,* Walter Elliott; *costumes by* Ailine Bernstein *and* Harold Miles; *recorded by* John L. Cass; *edited by* Ted Cheesman; *dance director,* Benjamin Zemach; *set decorations,* Thomas Little; *optical effects,* Linwood G. Dunn, ASC; *makeup artist,* Carl Axcelle; *matte painter,* Mario Larrinaga; *first assistant director,* Harry D'Arcy; *second assistant director,* Charles Kerr; *camera operator,* Eddie Pyle; *assistant cameramen,* James Daly, Charles Burke; *matte photography,* Guy Newhard; *orchestrations,* Bernhard Kaun, Maurice de Packh, Edward Powell; *harp solos,* Lee Steiner; *music recorded by* P.J. Faulkner Jr.; *sound effects,* Walter G. Elliott; *assistant sound recordist,* Ralph Spotts; *assistant film editor,* Roland Gross; *production illustrators,* Lansing Holden, R. Doulton Stott, Harold Miles, George Russell, Mario Larrinaga, Vsevelod Ulianoff, Stanley Johnson, Charles Ohmann, Dan Sayre Groesback, Dennis Holden; *mosaic throne designed by* Alex Hall; *gaffer,* Leo Green; *head grip,* Marvin Woods; *prop master,* Charles Sayers; *wardrobe,* Eleanor Fieldhouse, Sandy; *hairdresser,* Hollis Barnes; *script continuity,* Gloria Truebe; *assistant to Cooper,* Zoe Porter; *nurse,* Esther Coleman; *research,* Elizabeth McGaffey; *technical advisor,* Dr. Luido Gorgastin; RCA *sound system; running time, 101 minutes at preview (cut to 96 minutes); released July 12, 1935.*

Ayesha, Helen Gahagan; *Leo Vincey,* Randolph Scott; *Tanya Dugmore,* Helen Mack; *Holly,* Nigel Bruce; *Billali,* Gustav von Seyffertitz; *John Vincey,* Samuel S. Hinds; *Amahaggar Chief,* Noble Johnson; *Dugmore,* Lumsden Hare; *Captain of the Guard,* Jim Thorpe; *High Priest,* Julius Adler; *Priest,* Arnold Grey; *Priest,* Bill Wolfe; *Guards,* Ray Corrigan, Jerry Frank.

This article was based in part on conversations with Merian C. Cooper, Linwood G. Dunn, ASC, Roland Gross, ACE, Mario Larrinaga, Zoe Porter, Ernest B. Schoedsack, Peter Schoedsack and Ruth Rose Schoedsack.



compiled by Marji Rhea



Camera Stabilizing System

The PRO camera stabilizing system features a five-inch monitor and frictionless gimbal, eliminating the need to constantly correct unwanted pan-and-tilt deviations. The new "Donkey Box" balancing system makes use of worm-drive components for the X and Y axes, allowing the operator to make precision leveling adjustments for headroom and horizon without having to unlock the camera mount.

The PRO Sled can carry three separate 3 amp/hour batteries which can be configured for 12-volt systems, 12-volt high-speed camera systems, or 24-volt camera systems. All configurations eliminate camera noise in the video system by isolating it completely from the camera power. This battery system also eliminates the need to carry the dead weight of a power converter.

The system has been used on more than 100 feature films, including *Stargate*, where it withstood the rigors of the Sonora sand dunes, *On Deadly Ground*, shot in Alaska, and *Waterworld*, shot in Hawaii.

For information: George Paddock Inc., (818) 982-3991, (800) 390-3991, FAX (818) 982-8976.

Video Server

Sierra Design Labs' SCSI Framer is a video server solution for the postproduction and animation/effects market. When combined with the company's Quick-Frame family of high-capacity digital disk recorders, the SCSI Framer provides concurrent access to uncompressed component disk storage for up to 12 workstations.

Interfacing to any workstation's SCSI port, the SCSI Framer creates a department level network with local video display capabilities. Up to 12 users in separate suites working on SGI, HP, Macintosh or other workstations can tap into one or more 3- to 48- minute high-capacity DDRs at the same time. Capitalizing on SCSI fast and wide technology, the content travels at eight frames per second between the Quick-Frame DDR and each workstation, compared to Ethernet's .15 fps or SCSI I's 1.25 fps.

The server offers two or four fast/wide SCSI ports (with up to 20 MBytes/second per port), a full-bandwidth CCIR-601 frame buffer for each SCSI port, built-in component analog and composite analog video outputs, multi-SCSI striping mode for real-time CCIR-601 performance, full support of 8/16 bit, differential of single-ended SCSI, and SCSI initiator support for higher speed DDR backup. The multiple operating modes greatly enhance flexibility while stackable modules allow for multi-channel video expansion.

For information: Sierra Design Labs, 999 Tahoe Blvd., Incline Village, NV 89451, (702) 831-7837, FAX (702) 831-5710.

CD-ROM on Video Production

The Cooperative Media Group has produced for Wadsworth Publishing's Integrated Media Group the CD-ROM "Video Producer," which teaches everything from the dramatic effects of lighting to the practical application of using a zoom lens. Based on the work of author and video expert Herb Zettl, it is designed for videographers wanting to brush up on the finer points of their craft, or home camcorder fanatics who want their home movies to look better.

In addition to providing lessons in five main areas — camera, lighting, audio, editing and process — "Video Producer" also provides a quiz at the end of each section, which, when completed successfully, updates the student's fictitious resume. Also featured is a simulated in-flight news magazine called TeleBytes, which is filled with a variety of video mistakes that students are asked to identify and correct.

"Video Producer" captured a People's Choice Award for Best Educational New Media at the MacroMedia Developers Conference in the fall of 1994.

For information: Cooperative Media Group, 170 Capp St., San Francisco, CA 94110, (415) 431-2250.

Film and History

What Do Those Old Films Mean?, a six-part series which provides unusual perspectives on the earliest years of the movies, has been released by Facets Video. Produced by Britain's Channel 4 and the French Ministry of Culture and written and directed by film historian Noel Burch, the series looks at how film and history shed light on each other. Burch shows films from the U.K., U.S., Denmark, France, the Soviet Union and Germany to examine the social and political context in which they were made. In the program on Britain, for example, Burch shows how what was first an entertainment strictly for the working class became filled with strictures about drink, the evils of poaching, and the virtue of hard work.

Using rare archival prints and new music scores, *What Do Those Old Films Mean?* examines how films evolved during their early years. The six

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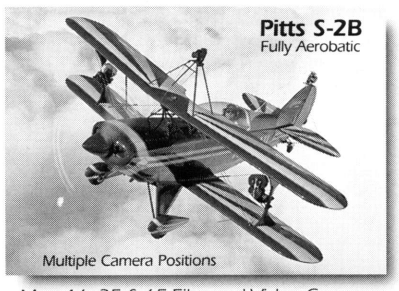

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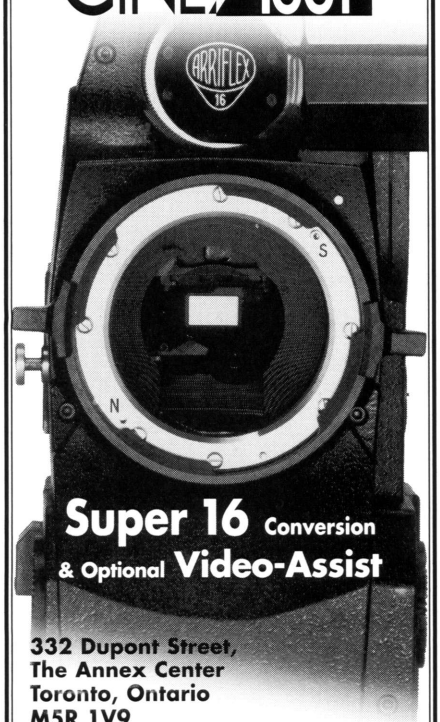

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volumes in the series are *Great Britain 1900-1912: Along the Great Divide*, presenting the inventors who developed cinema in Britain; *USA 1902-1914: Tomorrow the World*, looking at how American cinema developed to cater to different audiences, including immigrant communities; *Denmark 1902-1914: She!*, reflecting the image of the emancipated woman; *France 1904-1912: The Enemy Below*, on the importance of populist styles and attitudes in the development of early French cinema; *USSR 1926-1930: Born Yesterday*, covering the role of women and changes in everyday life wrought by the Soviet revolution; and *Germany 1926-1932: Under Two Flags*, about the development of different styles of popular progressive cinema cut short by the Nazi victory in 1933.

For information: Facets Video, 1517 West Fullerton Ave., Chicago, IL 60614 (800) 331-6197, FAX (312) 929-5437.

Weatherproof Robotic Camera System

Telemetrics' TM-9400 is an RS-232 controlled weatherproof robotic camera system which contains in an environmental housing the camera, lens, pan/tilt/zoom/focus functions, preset position data, power supply, thermostatic heater, cooling fan, and window wiper. The camera systems are currently in use at television systems across the country, including NBC-NY, FOX-NY, CBS-NY, and Philadelphia's WPVI.

For information: Telemetrics, Inc., 6 Leighton Place, Mahwah, NJ 07430, (201) 848-9818, FAX (201) 848-9819.

Lightbank Kit

Chimera has designed a special version of the Micro Kit for the Dedo, LTM Pepper 100, and the Mole Tiny 200. This Micro Lightbank Kit utilizes a 3" circular speed ring to mount the micro to the light unit, and is useful as an on-camera eyelight or fill for film and video production.

Chimera's new quartz line of lightbanks have removable front screens and work with all existing speed rings for the quartz line. The front screen attaches by Velcro on all four sides, allowing for easy removal as well as for the attachment of various other types of diffusion on the market. The units accept all Chimera light control accessories, including grids, barn doors and louvers.

For information: Chimera Photographic Lighting, 1812 Valtec Lane, Boulder, CO 80301, (303) 444-8000.

Bonzai Lights

LTM recently introduced four new products at the NAB show in Las Vegas. The Bonzai 200 miniature HMI Fresnel light for film and video production operates from AC or DC power, weighs three pounds, measures seven inches long, takes a single-ended, hot-restrike daylight bulb, and has a corresponding line of grip and control accessories.

The Cinepar 2.5/4K Combo HMI parabolic light fixture is for use with either 2.5K or 4K ballasts in magnetic or electronic format and is spread-controlled by three patterned and one Fresnel lens.

The Cinepar 6K HMI parabolic light fixture is designed for rugged location shooting, provides 6,000 watts of intense daylight, and is spread-controlled like the Cinepar 2.5/4K Combo.

LTM's new line of fluorescent lightbanks, the Moonlites, offer soft, cool, continuous light output in either tungsten or daylight color temperature, are available in various sizes, from two-bulb to 24-bulb formats, and are designed for location use or permanent installation in studios and video teleconferencing facilities.

For information: LTM, (800) 762-4291.

Diffusion Confusion Ended

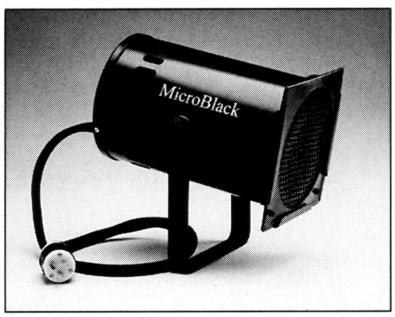
The Great American Market's GamFusion sequence of ten graded filters starts with an almost imperceptible "nearly clear" first step, 10-10, which can be used to smooth the beam of an uneven spotlight. The most diffused, 10-90, is so dense that it reduces the beam intensity by 85% and is ideal for light boxes or situations in which the audience or camera might look directly at a light source.

Each of the graded steps is

made from clear polyester and is coated with a high-temperature diffusing and whitening agent to hold up to temperatures of 450 degrees without turning yellow. GamFusion is available in rolls and sheets.

The company's "End the Confusion in Diffusion" pamphlet explains the theory and application of diffusion filters. Its "20 Degrees of Diffusion" chart compares the performance of the GamFusion filters.

For information: The Great American Market, 826 N. Cole Ave., Hollywood, CA 90038, (213) 461-0200, FAX (213) 461-4308.



Compact
Black Light Fixture

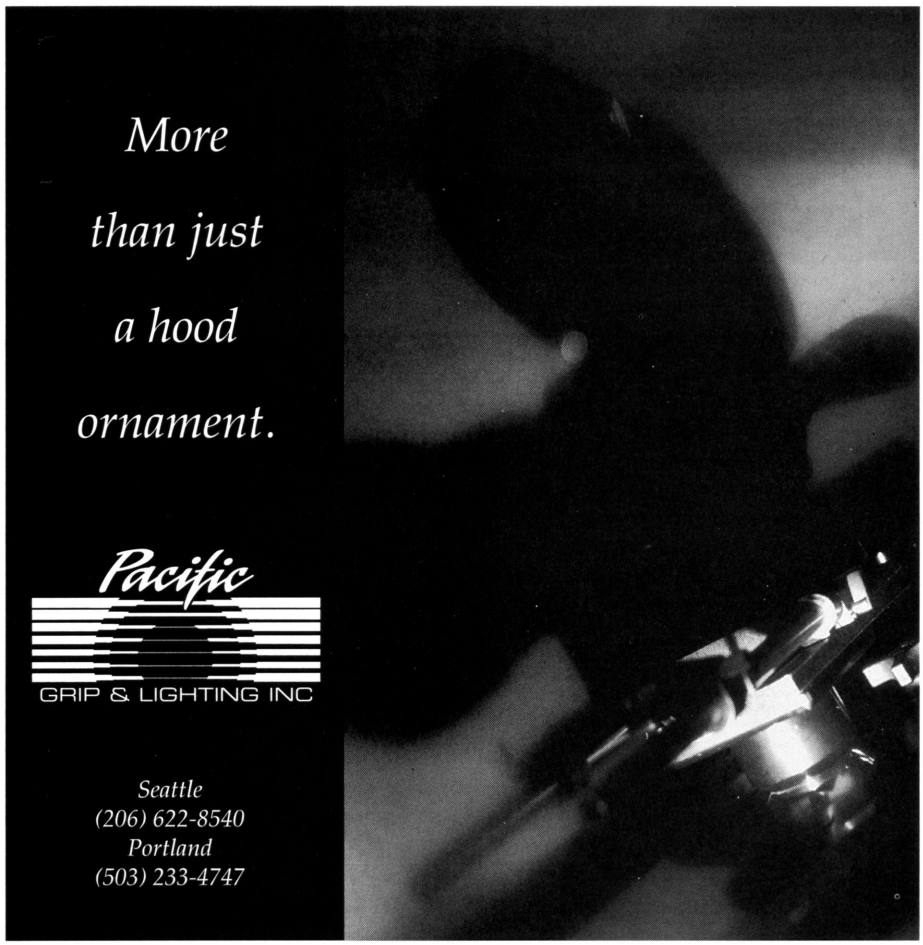
ZC&R's MicroBlack, one of the smallest black light fixtures on the market, measures 8" X 12" and weighs less than five pounds. It features a 5,000-hour 150-watt self-ballast mercury vapor lamp with a maximum throw of 15 feet, and has an internal safety cutoff switch and optical glass filter. The unit operates on 110/120V AC 60 Hz, with 220/240V AC 50Hz units also available. Its powder-coated body and solid aluminum yoke is designed for easy installation.

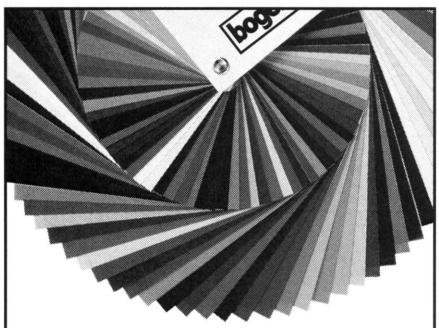
For information: ZC&R Blacklite, 1250 E. 223rd St., Suite 111, Carson, CA 90745, (310) 513-6319, FAX (310) 513-6412.

Location
and Shadow Lights

DeSisti Lighting has developed new lighting units for location shooting which incorporate reduced luminaire size and increased weight advantages due to a new series of bulbs offered by Philips "Blue Pinch" technology for quartz halogen lamps.

With their greatly reduced size, these bulbs allow for striking reductions in both lens size and fixture size and weight, without any significant change in light output or beam spread. The units





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are available in 1,000, 2,000 and 5,000W outputs.

The company's Goya 2,500/4,000W discharge daylight shadow light luminaire can illuminate wide areas from a single-shadow source and be used in any mounted position. It can be used as a broadlight for wide coverage, as a skypan, for overhead lighting, as a bounce light, or as a source for drops and cycloramas.

The DeSisti electronic ballast is capable of mounting either a 2,500 or 4,000W single-ended discharge lamp. The luminaire can be both locally and remotely operated by momentary push buttons, and features DeSisti's hot restrike for quiet operation. Other characteristics include a special ceramic glass filter for protection against UV lamp emission; an external knob for locking/unlocking the bulb with a special cam to guarantee bulb tightening; easy access for bulb insertion/removal; high efficiency air flow to enhance heat dissipation; flicker-free ballast operation; special safety cutoffs; and an igniter box-mounted counter that shows operation hours for easy lamp life detection.

The unit's stainless steel housing measures 29.4" X 20.5" X 12.6" when mounted and weighs just 37 pounds. It is available with both electronic and magnetic ballast and is finished in electrostatically deposed black epoxy paint with yellow-painted stirrup and skid.

For information: DeSisti Lighting, 1109 Grand Ave., North Bergen, NJ 07047, (201) 391-1100, FAX (201) 391-1104.

Tripod and Fluid Head

Sachtler's OB 2000 heavy-duty tripod has an integrated off-ground spreader which clamps to a hand-crank column, eliminating the need for a separate spreader. The tripod has rotatable rubber feet and hinge locks that can be tightened and clamped to prevent unwanted movement between tripod legs and the base. Besides the Video 90 pan-and-tilt head, the OB 2000 accepts all standard flat base mounts and hand-crank columns, as well as Video Mitchell mounts, without any adapter.

The Video 90 fluid head weighs 31.7 pounds and can carry as much as 198 pounds. It comes with the patented leak-proof frictionless Sachtler fluid damping, reproducible at any payload and temperature within range and fully matched in pan and tilt. New for Sachtler heads is the arrangement of positive horizontal and vertical brakes for freezing the picture on-air at the rear of the head.

The extended range of the sliding balance plate also meets teleprompting requirements. Its spindle drive balances the camera with the prompter at any tilt position.

For information: Sachtler AG, (089) 3 21 58-200, FAX (089) 3 21 58-227.

Van Top Camera Platform

Carter Car Tops' new tubular metal van-top camera platform for photographers and videographers is easy to assemble and can be mailed via UPS. All necessary parts are supplied except for a $^3/_8$" sheet of MDO plywood.

For information: Harry "Carter Cartop" Mfg., P.O. Box 298, Welches, OR 97067, (503) 622-4477.

Cable Organizer

The Rip-Tie Company's CableCatch Velcro fastener anchors cords, cables and wires along surfaces and has a peel-away backing for easy placement. The CableCatch adheres to equipment racks, desks or walls and is safe even for assembling cable runs which transport high-speed data. The fasteners — which have been used to secure sound cables at the Cirque du Soleil and as ID tags for ostriches on a Texas bird breeding farm — are reusable and can be released with a quick pull of the tab.

For information: The Rip-Tie Company, P.O. Box 77394, San Francisco, CA 94107, (415) 543-0170, FAX (415) 777-9868.

Sports Broadcasting Products

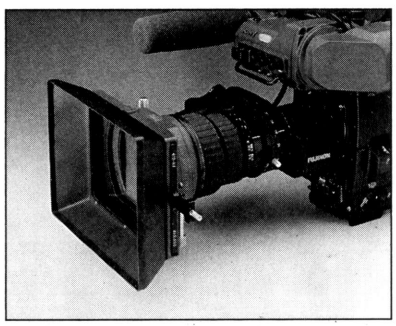
Egripment has introduced a new fixed camera platform, sports dolly and remote-controlled dolly for use in sports broadcasting. The Hi-Lo Platform is equipped with three legs and a ladder, offering a maximum height of 5' 9". A seat swivel support system is installed on the platform, with a camera bracket for the television camera. A pedal swivel support allows the cameraperson to move the seat and camera by pushing the footrests of the seat.

The Sports Dolly camera platform consists of a platform upon which

a seat support system and camera risers and levelers can be mounted. Its two wheels can roll into position on any surface. Once in position, the platform is automatically lifted from its wheels and leveled at three points.

Electric Boogie Wheels, an option for all Egripment platform dollies, offer variable speeds and can be remotely controlled by either a handgrip or joystick. Combining the Electric Boogie Wheels with an Egripment platform dolly and a remote head results in a completely remote dolly system for indoor or outdoor shooting.

For information: Egripment USA, 7625 Hayvenhurst Ave., #27, Van Nuys, CA 91406, (818) 787-4295, (818) 787-6195.



Lens Shade/Filter Holder

Century Precision Optics' lens shade/filter holder for the .6X Double Asphere wide-angle adapter has one filter slot to accommodate either a 4" X 5" or Panavision-size filter holder. The .6X Double Asphere uses a single element with two aspheric surfaces, minimizing distortion and reducing chromatic aberration while increasing edge resolution. The Double Asphere and its lens shade/filter holder are lightweight, compact, and ideal for use with the latest internal focus lenses such as the Fujinon 15 X 8 and the Canon 15 X 8 and 14 X 8.5, for any non-zoom shot that calls for the sharpest wide view available. It may be used with 80, 85, and 90mm lens fronts.

For information: Century Precision Optics, 10713 Burbank Blvd., North Hollywood, CA 91601, (818) 766-3715, FAX (818) 505-9865.

Electronic Repair Tape

Sili Tape, a self-bonding silicone rubber tape for electronic field repairs, cleanly and instantly bonds to itself without the use of heat or adhesives.

35 MM REFLEX

The Fries model 435 is a new general purpose MOS production 35mm camera. With its optical printer compatible register pins, steadiness and 150 FPS speed. The 435 is ideally suited for special effects, commercials or any photography where a quality steady image is desired.

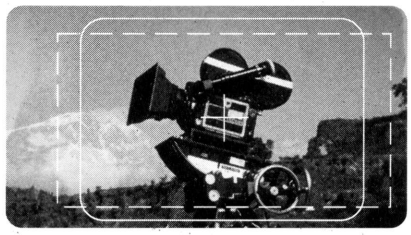
The 435 is a spinning mirror reflex camera with a 170 degree blanking shutter. The internal 30VDC motor runs the camera from 2 to 150 FPS forward and 2 to 50 FPS reverse, in one frame increments all crystal. The camera is equipped with take-up and supply torque motors.

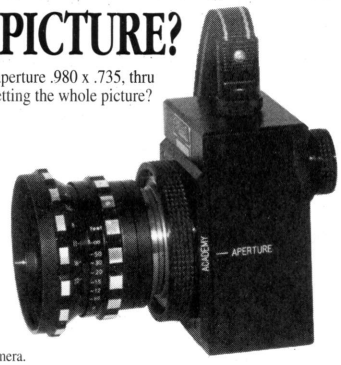
There are both 1000 ft. and 400 ft. displacement type magazines. A new feature is the light valve which allows the operator to direct all the light to the viewing system, or to the video assist, or combo which splits the light between both viewing and video assist.

35 mm, Reflex Camera

WHY NOT SEE THE WHOLE PICTURE?

The new Fries Director's Viewfinder allows the director to view the full camera aperture .980 x .735, thru the same lenses that will be used on the camera when filming. Why aren't you getting the whole picture?





Film Clip: The finder has a set of register pins that will hold a film clip the same as the Fries camera.
Groundglasses: Interchangeable. The same groundglass as is used in the Fries 35R and 35R3 cameras.

Director's Viewfinder

Fries Engineering designs and manufacturers special effects cameras and conversions in 35mm, 65mm and Vistavision including high speed, time lapse and motion control.

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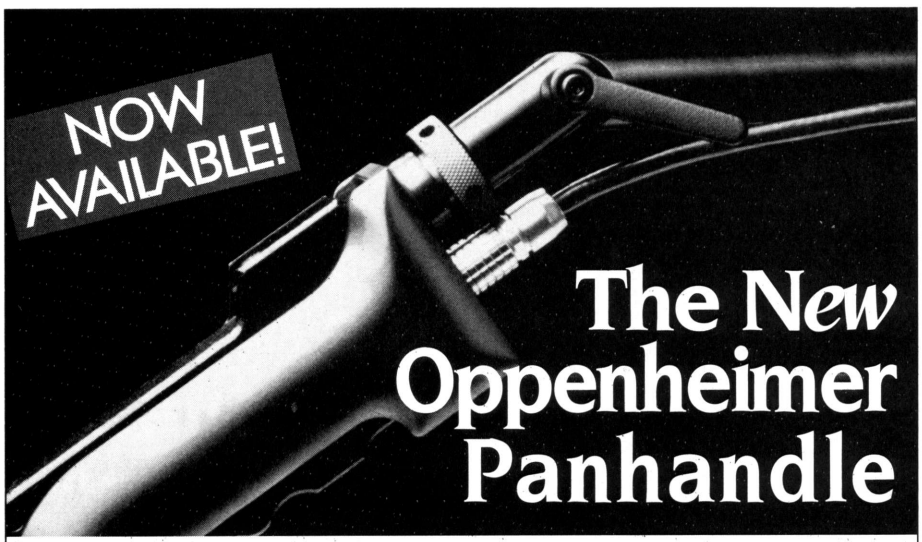

Oppenheimer Camera proudly announces the arrival of the **new *articulating* version** of our popular Oppenheimer Panhandle for the Microforce Zoom control. The Oppenheimer Panhandle has become the standard at the world's best rental houses and it is usually requested by name!

Our clean, ergonomic design has been copied, but not equaled. We can interface with fluid heads manufactured by Sachtler, O'Connor, Cartoni, Ronford, Vinton, & Weaver-Steadman. And our hand-held attachment allows you to use the Oppenheimer Grip with the Microforce control as a right-hand grip on 16/35mm Aaton & Arriflex, and 35mm Moviecam cameras.

The new, improved version is now in stock. Through June 1995, we are offering an ***Articulating Version Trade-up Program*** for current owners of the Oppenheimer Panhandle. Call or fax us in Seattle for details. If you are not currently using our system, let us tell you how it can help make your operating easier.

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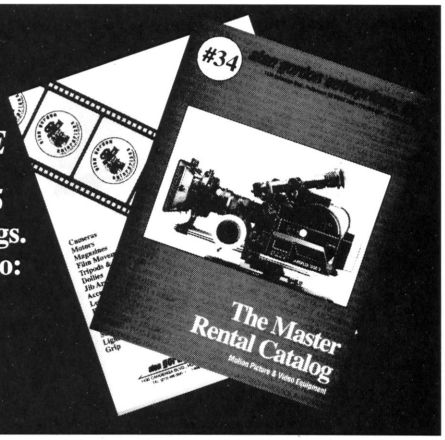

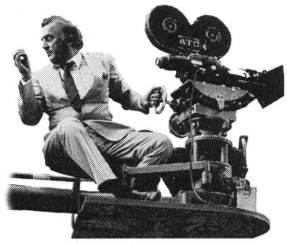

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For information: PAG Ltd., 565 Kingston Rd., London SW20 8SA, 44.081.543.3131, FAX 44.081.540.4797.

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For information: Birns & Sawyer, Inc., 1026 N. Highland Ave., Hollywood, CA 90038, (213) 466-8211, FAX (213) 466-7049.

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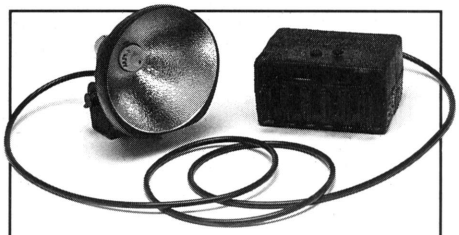

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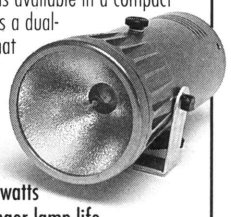

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An 8-bit microprocessor handles the work of remembering what is happening with the electricity. Voltage is sampled 60 times a second, and every cycle is observed. The quartz crystal time base for synchronization is hermetically sealed, keeping out moisture and creating a temperature range for operation below freezing and above 100 degrees F.

The meter is fused and comes with a handle for hanging or supporting in an upright position. The meter has a one-year warranty.

For information: Line Gap, Inc., (404) 474-8720.

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Pulizzi Engineering's TPC 2234 rack-mounted, dual-input, auto-switching AC power controller is 1 3/4" high, 4 1/2" deep and weighs 5 pounds. It is a single-phase, 110V AC power distribution system with two separate power inputs via nine-foot cables with NEMA 5-15P input plugs.

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NEMA 5-15R output receptacles are protected by a push-button, resettable 15-Amp circuit breaker. A lighted rocker switch controls the system and indicates that power is available to the outlets.

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For information: Pulizzi Engineering, 3260 S. Susan St., Santa Ana, CA 92704-6865, (714) 540-4229, FAX (714) 641-9062.

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The battery pack measures 10.5" long X 13" high and weighs 17 pounds. It comes complete with copper boosting cables and an AC adapter, which recharges the unit from any standard household unit. The addition of a special test button and LED lights display the current battery capacity. There is also an optional S15 Power Cord which allows the engine battery to be recharged through any vehicle's cigarette lighter socket.

For information: Statpower Technologies Corp., 7725 Lougheed Hwy., Burnaby, BC, V5A 4V8, (604) 420-1585, FAX (604) 420-1591.

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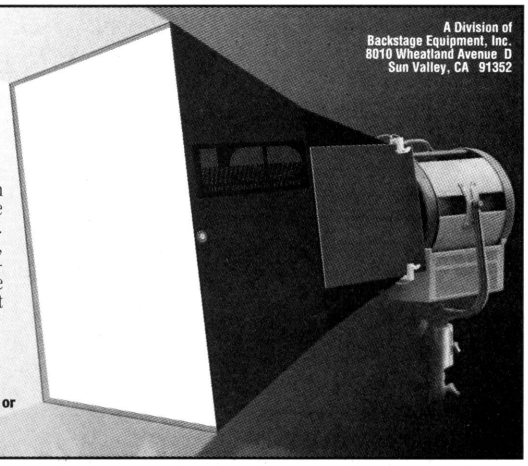

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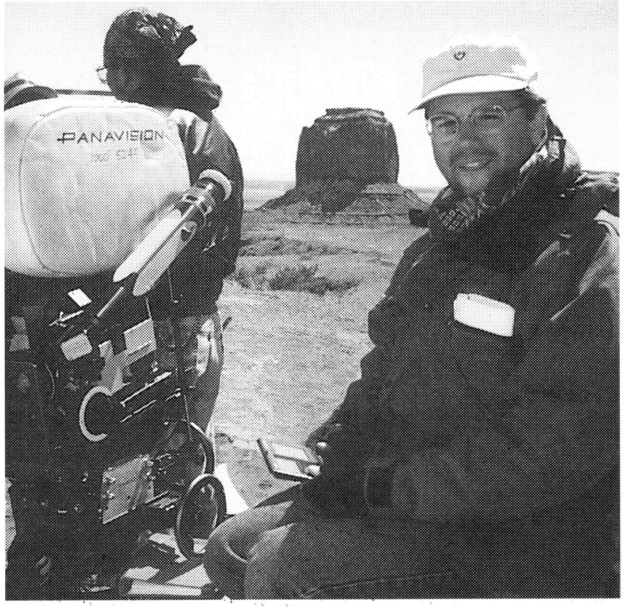

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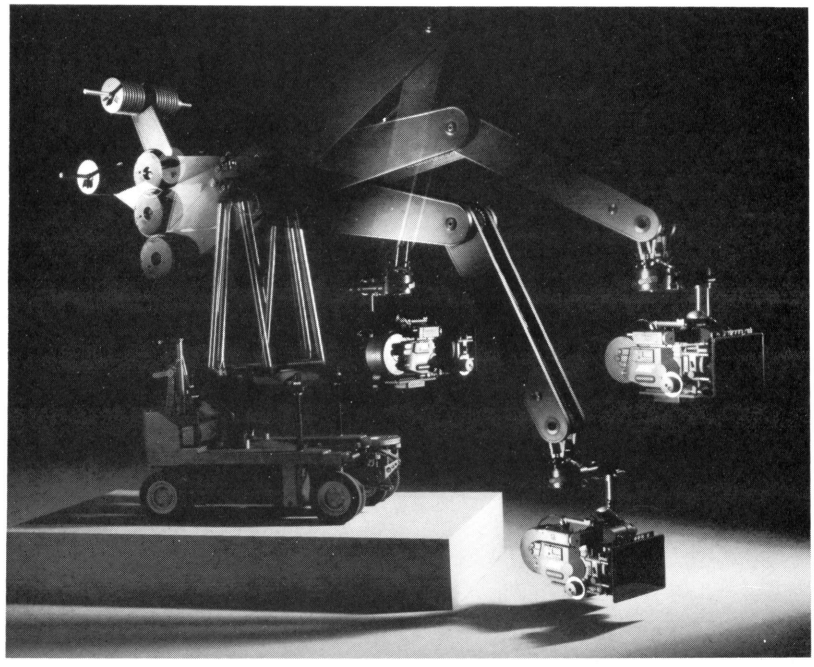

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For information: Media Logic, 17 West 20th St., Suite 5E, New York, NY 10011, (212) 924-3824, FAX (212) 924-3823.

DSP Color Camera

The Elmo ITV Division's Elmo QN401E is a micro-digital signal processing remote head color camera. The camera head measures 7mm in diameter and is available with two optional lenses, 4mm (51 horizontal) and 8mm (25 horizontal). The 1/4" color CCD Elmo QN401E delivers 470 line resolution (H) with minimum lux of 40 at f/2.5. The signal to noise ratio is better than 46dB. The advanced linear electronic auto shutter has a wide range from $^1/_{60}$ to $^1/_{10,000}$ second.

Built-in features include video outputs for both NTSC and Y/C, synchronized internal/external auto changeover, and on/off sens up switch. Special length optional pigtail cables are also available. The camera measures 7mm in diameter and 42mm long and is supplied with a two-meter pigtail cable. It weighs 0.14 ounces without cable and utilizes 12V DC power.

For information: Elmo Mfg. Corp., 70 New Hyde Park Rd., New Hyde Park, NY 11040, (516) 775-3200.

Errata

In our April issue we inadvertently switched the photos for the Cinemeter II incident light meter and the Minolta Flash Meter V exposure meter. We apologize for the error.

Discovery Channel Explores Big Screen

by Brooke Comer

Discovery Pictures was an inevitable offspring of Discovery Communications, parent company of the Discovery Channel. The new division will expand on the documentary-style theme that the Discovery Productions Unit is well known for, but on the big screen. Discovery Pictures will supplement the 60- and 90-minute feature-length non-fiction programming for Discovery's television networks with films for world release in both 35mm and large-screen formats. Virtual reality and 3-D projects are still in the development stages.

Discovery Pictures' first release, *The Leopard Son,* will hit theaters in spring of 1996. The film, shot and directed by award winner Hugo Van Lawick (*People of the Forest*), recently wrapped after two years of production in the Serengeti. The story follows a young leopard cub as he comes of age in the wilderness.

Discovery Pictures' senior VPs Denise Baddour and Tim Cowling, general manager and executive producer respectively, describe the impact of their company's foray into theaters. "Discovery's move out of home entertainment is a natural extension for us," says Baddour. "We looked at the Imax topics and saw some of the same kinds of titles you'd see on the Discovery Channel. The market was obviously there. The only difference is, ultimately the large-format projects we do won't transfer to TV. But the 35mm projects will, and that's our direct link."

Cowling notes that cinematographer-directors like *The Leopard Son's* Van Lawick, who is already established as a top TV documentarian, will have a new venue on the big screen. "Cinematography is paramount in projects like ours," Cowling notes. "Hugo is not only a first-rate director of photography and director, but he's also an accomplished naturalist. He knows how to set up the Land Rover at exactly the right position, so that the backlight is perfect. He has an overall sense of aesthetics." Cowling also looks forward to working with "new" cinematographers and directors, "people from the feature world who've never done a natural history film. It's very exciting for them to be working in a new context. And that excitement comes through onscreen."

According to the Discovery VPs, the crucial element in making natural history films into feature films is having the right team of filmmakers. "We need the top talent out there," says Baddour. Filming in the Serengeti plains was more difficult than the production team anticipated. Cowling notes that "we hadn't anticipated the depth of field problems in 35mm; we were using a slow-speed stock, 5245, for day exteriors. It gave us a gorgeous, fine-grain picture, but it was very, very slow. And you have to shoot wide open, because you have animals going in and out of the frame. Obviously, you can't tell a lion to sit still or move to his mark." Eventually, Van Lawick devised a camera car out of a Land Rover ambulance, which gave him a two-camera position to cover the film.

There were rewards for shooting with the slow stock, however. "The material was exquisite," says Cowling. "The challenge was following leopards who are up at 5 a.m. The light isn't usable until 7 a.m., so you've got to be out at six to be ready. Then you have to stay with the animal all day, even if you're not shooting; you have to know where they are at night so you can begin shooting without delay the next morning. We couldn't afford to waste valuable light running around searching for the leopard."

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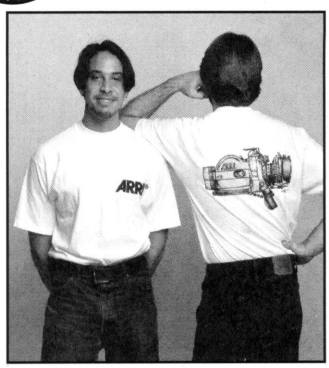

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The filmmakers spent 14- to 16-hour days following the leopard family. "We could have used direction finders, which send a signal telling you where the animals are, but we chose not to create any unnatural situations," Cowling explains. Night shoots were also avoided, again out of concern for violating the integrity of the animal's natural habitat. "We didn't want to alter their behavior and create an unrealistic film," Cowling adds. The filmmakers also didn't want to disturb the natural food chain; lights would have blinded prey animals, giving the wildcats an advantage.

Helicopters were forbidden in the national park where shooting took place. To get aerial shots, Van Lawick went up in a hot-air balloon. "Aerial photography gave us an important point of view," Cowlings explains. "It helped open the film up, to see the plains as an eagle would."

Wind posed an unexpected problem. "We found that when the slightest wind blew over the Serengeti plains, animals jumped out of frame," Cowlings recounts. Hydraulic jacks were built into the Land Rover to stabilize the cameras during long-lens scenes.

Van Lawick chose an Aaton and Arri 3 to take on location. "The Aaton gave us the chance to change magazines quickly, so we were able to get material we couldn't have gotten with any other camera," says Cowlings. "When a sudden moment of drama presented itself, we just had time to pop in the film."

As the two-year shoot progressed, the filmmakers found it less difficult to follow the same leopard, not because his markings were different from those of his neighbors, but because his behavior had become familiar. "You learn to recognize him," says Baddour. "You can contrast his personality with his mother's. He's capricious and goofy. She takes life more seriously."

Will more natural history films follow, or will Discovery Pictures diversify into other genres? "We plan to explore subjects that stem from the natural world," says Baddour. "It's fair to say we won't focus on traditional art-house films, because we're hoping to develop topics for a family audience. But that doesn't mean our films won't expand beyond purely natural-history wildlife films. We're looking for special talent and special circumstances."

Books in Review

by George Turner

Painting with Light
by John Alton
University of California Press,
230 pps., cloth $45, paper $20

For many years, one of the most persistent questions called in to ASC headquarters has been, "Where can I get a copy of *Painting with Light?"* The usual reply was, "If you find one let us know." This legendary book, whose title has become a much-used phrase within the industry, was published in 1949, and, as the only up-to-date book of its kind, was highly influential among young people who aspired to become cinematographers. It soon went out of print, and has been almost impossible to find.

At the time John Alton wrote the book, which began in 1945 as a series of articles in *International Photographer* magazine, he was at the lamented Eagle-Lion Studios on Santa Monica Blvd. in Hollywood. There he specialized in a much-praised photographic style that gave a sharper edge to a series of what were then called hard-boiled crime dramas, such as *T-Men, Raw Deal, Hollow Triumph, Canon City,* and *He Walked by Night.* Today they're celebrated as landmarks of *film noir,* a term not then in use. Many of the book's illustrations are from these films.

Painting with Light originally created a great deal of controversy within the industry. The very iconoclasticism that made his work distinctive also meant that his methods would not be acceptable to many of his colleagues. In 14 brief chapters he tells a lot about lighting, including mystery lighting and lighting special situations such as rain, fog, snow, moonlight, and in the process stage; exteriors; close-ups; laboratory procedures; filming an ocean voyage, etc. There is even a chapter comparing cinematography to music and another telling how to light your home more attractively and make the lady of the house look her best.

When all of this was written, the studio system was in full sway. Cameras were heavier, film was slower, and much of the equipment was unsophisticated compared to what today's cinematographers use. The resulting work is, therefore, outdated in some respects, but much of it is timeless. Alton had many theories on how to broaden the scope of cinematography, some of which have come to pass and others which never got beyond the idea form. Particularly interesting are some ways of improving process stages via an ingenious mechanism to permit more varied camera angles and a built-in turntable in front of the screen to facilitate placement of foreground objects.

The photographs in the new edition are not as well reproduced as in the original, and the several Kodachrome plates are now black & white. On the other hand, there is a considerable bonus in the addition of a 39-page introduction by Todd McCarthy, chief film critic of *Daily Variety* and co-director of the marvelous documentary *Visions of Light: The Art of Cinematography.* McCarthy provides an informative overview of Alton's life and career, including an extensive filmography. He deals frankly with Alton's unpopularity with many of his colleagues and most studio bosses. At the same time it is obvious that Alton had great rapport with some important production people, including Anthony Mann, Vincente Minnelli and Richard Brooks. Just for the record, there are a couple of errors: *The Lady and the Monster* wasn't re-named *Donovan's Brain* (a later film based on the same book). And Alton's nemesis, John Arnold, ASC, was not "the first and long-term president of the American Society of Cinematographers."

Painting with Light is a valuable bookshelf item on several levels: as

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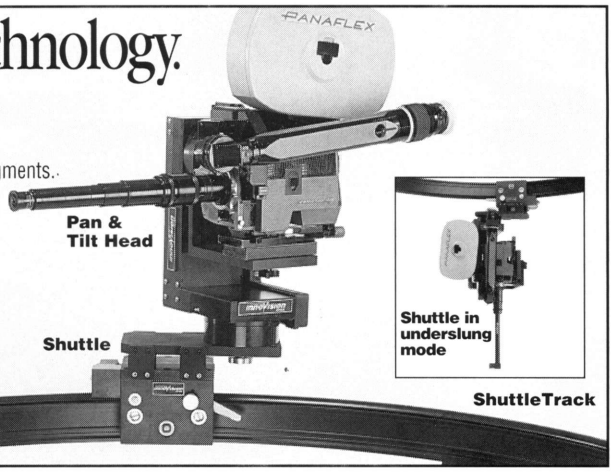

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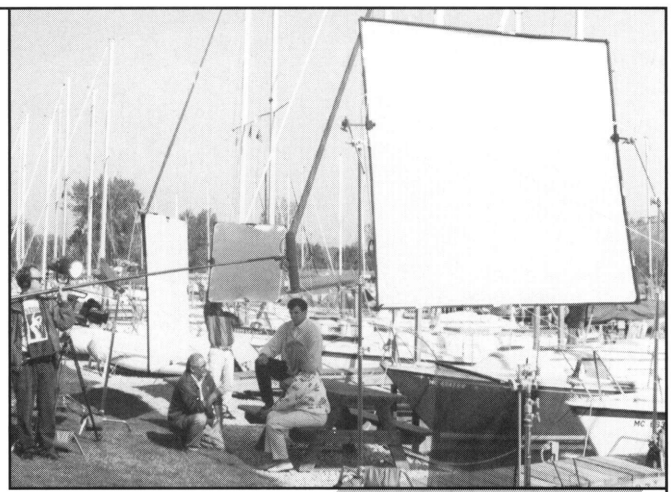

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a source of ideas, as a historical document, and as a key to the work of one of cinematography's more colorful mavericks.

Robert Wise, a Bio-Bibliography
by Frank Thompson
Greenwood, library binding, 184 pps., $55

Most writers on the arts strongly favor the eccentric genius. Van Gogh wouldn't be half the critics' darling he is if he hadn't been mentally disturbed and lopped off his ear, nor would Wagner be nearly so fascinating if he hadn't been such a heel. The same applies to the creative people behind motion pictures.

How refreshing, then, to encounter a book devoted to a fine director who also happens to be a fine man! Other attributes which might mitigate against Robert Wise's inclusion in the Pantheon of Great Directors are versatility and craftsmanship (cardinal sins!), popularity, a penchant for delivering a finished product which doesn't have to be rescued (or mutilated, according to the point of view), and a substantial body of work.

As Thompson notes, Wise began in the editing department at RKO, and then directed some second units and pickups. He later became one of Val Lewton's acclaimed directors *(The Body Snatcher)* and an expert at making classy pictures on moderate budgets *(The Set Up, Born to Kill).* He had definitely hit the big-time when he made the likes of *Helen of Troy, I Want to Live!, Executive Suite, Two Flags West, The Day the Earth Stood Still,* and *The Haunting.* Among his honors were two Oscars as producer and director of *West Side Story.* He repeated that feat in 1965 for *The Sound of Music,* and received the Irving G. Thalberg Award in 1966.

Thompson provides a useful career chronology, a biographical sketch, a filmography with detailed casts and credits of 63 features, a list of unrealized projects, and a chronological bibliography of just about everything ever published about Wise. The book is slim and expensive, but it is intended as a permanent library reference book and accordingly is printed and bound to last.

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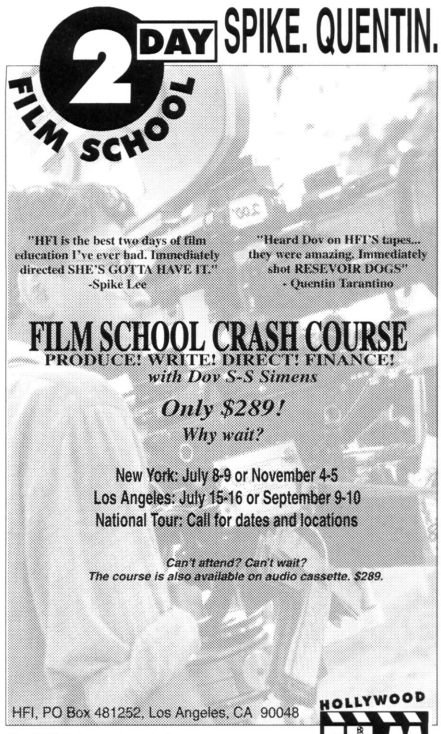

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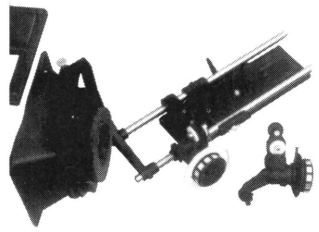

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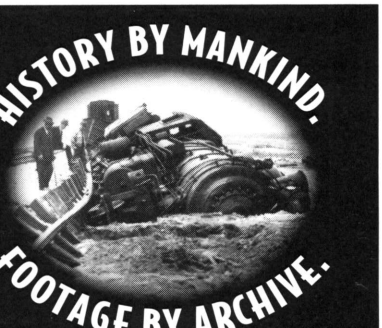

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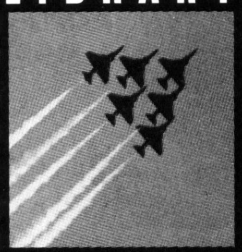

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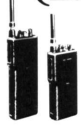

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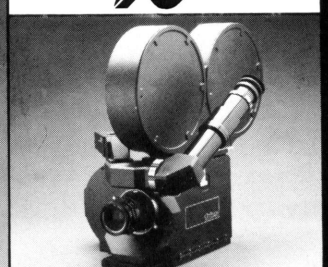

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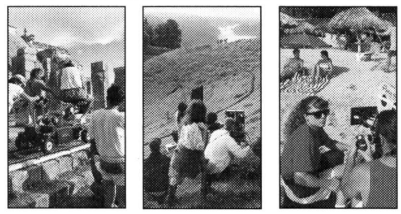

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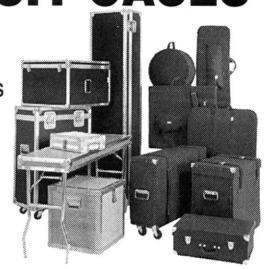

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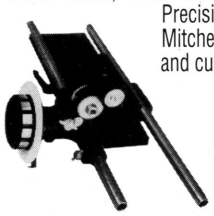

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From the Clubhouse

The ASC's newest members are associate member Larry Kingen and active members Kenneth Zunder and John Toll.

Larry Kingen is president and chief operating officer of All Post, Inc., and has been actively involved in the videotape postproduction business for more than 20 years. From 1986 to 1990 he was president and chief operating officer of A.M.E., Inc., one of the largest videotape postproduction companies in the United States. From 1985 to 1986 he was senior vice president of Compact Video, Inc. He served as president of Editel from 1984 to 1985 and rose from vice president of Technicolor/Vidtronics, Inc. to the post of president from 1982 to 1984. Before working in the Los Angeles area, Kingen was vice president of sales and marketing for a San Francisco videotape postproduction company, One Pass Film & Video. Kingen was a member of the board of directors of the Hollywood Radio and Television Society, an association representing the motion picture, radio and television industries in Los Angeles.

Kenneth Zunder graduated from Harvard with a B.A. in Art History and went on to get his master's in film at Stanford. From there he spent five years in the Bay Area making documentary films before being accepted into the Camera Training Program in 1978, where his first job was filming CBS fall promos with Laszlo Kovacs, ASC. On his way up through the ranks of second and first assistant and operator, he worked with such esteemed directors of photography as Bob Liu, ASC, Tom Del Ruth, ASC, Phil Lathrop, ASC, Bill Butler, ASC, John Lindley and John Seale, ACS.

Zunder became a director of photography on *thirtysomething*, and has since worked on the series *Brooklyn Bridge* and *seaQuest DSV*. All three series earned him ASC nominations; his work on *seaQuest DSV* also won him an Emmy nomination. His television movie credits include *87th Precinct, Darkness Before Dawn*, and the pilot for *Great Scott*. He did second-unit work on *Casper, The Good Son, Father of the Bride*, and *Rain Man*, and shot his first feature, *Bye Bye Love*, in 1994. He's currently working on his second feature.

Cleveland-born John Toll has been a director of photography for eight years, following ten years as an operator on such features as *Milagro Beanfield War* with Robbie Greenberg, ASC; *Black Widow* with Conrad Hall, ASC; *Peggy Sue Got Married* with Jordan Cronenweth, ASC; *Twilight Zone — The Movie* with Allen Daviau, ASC; and *Norma Rae* with John Alonzo, ASC. His television credits include the special *Goodnite Sweet Wife* and the pilot for *Young Riders*. In addition to second-unit work on *Blaze*, his feature credits include *Wind, Legends of the Fall* (for which he won this year's Academy Award for best cinematography), and *Braveheart*, an upcoming period action film starring Mel Gibson.

ASC members are currently working on the following projects:

Jack Green, *The Net*, Sony Pictures, filming in Los Angeles, San Francisco, and Washington, D.C.

Lajos Koltai, *Home for the Holidays*, PolyGram, Los Angeles, Baltimore.

Don Peterman, *Get Shorty*, MGM/UA, Los Angeles.

Giuseppe Rotunno, *Sabrina*, Paramount, Long Island, Paris, Massachusetts.

Donald Thorin, *Ace Ventura: When Nature Calls*, Warner Bros., San Antonio, Texas.

Roy Wagner, *Nick of Time*, Paramount, Los Angeles.

Haskell Wexler, *Mulholland Falls*, MGM/UA, Los Angeles.

Vilmos Zsigmond, *Assassins*, Warner Bros., Portland, Seattle, Puerto Rico.

In Memoriam

Philip H. Lathrop, ASC, who was honored with the 1992 ASC Lifetime Achievement Award, died of cancer on April 12, 1995. The award was particularly appropriate in that Lathrop spent most of his life in the movie studios. Born in Merced, California, his playground as a child was the Universal lot, where his mother was employed in the film lab. He became a member of the camera department there when he was 18. He recalled watching Gilbert Warrenton, ASC photograph the first version of *Show Boat* in 1928-29. Lathrop loaded cameras for John Mescall, ASC on the 1936 version.

In 1938 he became assistant to Joseph A. Valentine, ASC, Universal's top-ranking cinematographer. With Valentine he worked on the Deanna Durbin pictures; two Alfred Hitchcock classics, *Saboteur* and *Shadow of a Doubt;* and *The Wolf Man.* He later became an operator for Russell Metty, ASC for nine years, culminating in the intricacies of Orson Welles' *Touch of Evil* in 1957.

Lathrop became a director of photography at Universal in 1958, when he shot a series of 50 one-reel films at Walter Lantz Studio. His first feature that year was *The Perfect Furlough,* in CinemaScope and Eastman Color, with Janet Leigh and Tony Curtis. The color negative at that time had an ASA rating of 25 and required 800 to 1,000 footcandles of key light for proper exposure. The director was Blake Edwards, for whom he later photographed *Experiment in Terror, Days of Wine and Roses* and *The Pink Panther.*

Late in 1959 he also started working with Edwards in television, beginning auspiciously with one of the most influential series of the era, *Peter Gunn.* Lathrop's moody black & white images and Henry Mancini's jazz score merged memorably. He photographed the first 36 episodes of another collaboration with Edwards and Mancini, *Mr. Lucky.* Next he filmed *Hong Kong,* one of the earliest hour-long series in TV.

In 1961 Lathrop was in New Mexico's Sandia Mountains photographing *Lonely Are the Brave,* an early example of the 2.35:1 aspect ratio using the new Panavision lenses. The black & white drama, now considered a classic, was filmed at high altitudes, which made oxygen masks necessary for the cast and crew.

Lathrop rated *Point Blank,* directed by John Boorman in 1967, as his most unusual picture. Color charts were prepared for every scene, and color was

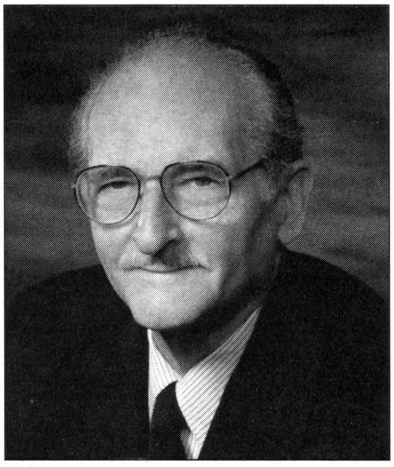

Photo by Merrett Smith

subdued and sometimes desaturated in contrast to other scenes with strong but never garish colors. He followed with another unusual color film, *Finian's Rainbow,* directed by Francis Ford Coppola.

A career highlight was *Earthquake,* directed by Mark Robson, whom Lathrop said "was able to get everyone around him excited about the film." Most of the remarkable *They Shoot Horses, Don't They?,* directed by Sidney Pollack, was filmed on a huge dance hall set on Stage 4 at Warner Bros., yet it is highly praised for its realism. Lathrop began *The Cincinnati Kid* in black & white with Sam Peckinpah; after the studio fired Peckinpah and relative newcomer Norman Jewison took over, Lathrop convinced the producers to switch to color film but keep the colors subdued. He smoked the sets (many years before this became the vogue) and had Harrison & Harrison create a set of low-contrast filters which are still in use.

Among Lathrop's 65 theatrical feature credits as a director of photography are *The Saga of Hemp Brown; What Did You Do in the War, Daddy?; I Love You, Alice B. Toklas; The Illustrated Man; The Gypsy Moths; The Hawaiians; Portnoy's Complaint; The Russians are Coming, the Russians are Coming; Mame; The Driver; Hammett; The Killer Elite; Class Reunion* and *Deadly Friend.* He received Oscar nominations for *The Americanization of Emily* and *Earthquake.*

During the 1980s he also made eight television movies-of-the-week and several mini-series. He won Emmys for *Malice in Wonderland* and *Christmas Snow* and was nominated for *Celebrity, Picking Up the Pieces* and *Little Girl Lost. Christmas Snow* and *Little Girl Lost* garnered ASC Awards as well. "I shoot them like features," he said. "I think of them as hundred-page movies. The main difference is that you don't work as long. That way I can keep my hand in without spending 60 to 70 days on a film."

Phil Lathrop was a long-time member of the ASC Board of Directors and was co-chairman with Bud Stone of the ASC Awards committee. His many contributions to the annual awards event included supervising the lighting of the International Ballroom of the Beverly Hilton. Lathrop was also active in the affairs of the Academy of Motion Picture Arts and Sciences and the Academy of Television Arts and Sciences.

He is survived by his wife, Betty Jo; three sons, Larry, Bill and Clark; and his sister, Hazel Morris of Burbank. Services were held at Forest Lawn Cemetery, Hollywood Hills, with the Reverend Robert M. Bock of the First Christian Church of North Hollywood presiding, and Masonic service by Harold Morris. Stanley Cortez, ASC delivered the eulogy.

A memorial tribute at the ASC Clubhouse on Saturday, April 22 featured a reprise of Cortez's eulogy and fond reminiscences of Lathrop's positive influence on all those he encountered.

— G.T.

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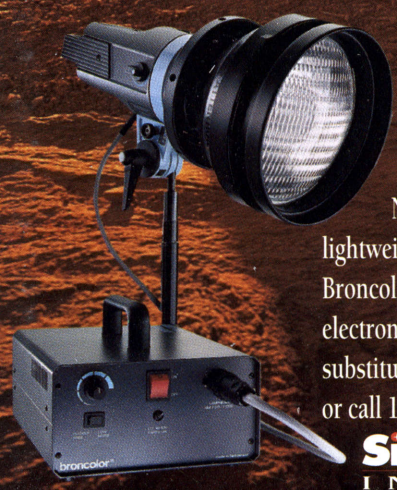

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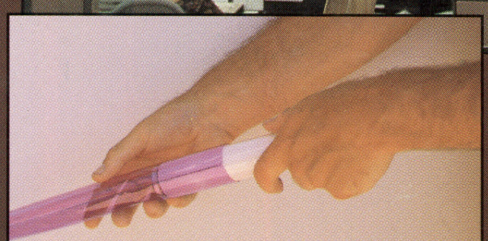

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